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✻ *Leading Articles* ✻

Examining and Advising Patients

By Joseph Colt Bloodgood, M.D., F.A.C.S., Baltimore, Md.

Observations on Comatose States

By William Cole, M.D., Long Beach, Calif.

The Management of Epilepsy

By Edward A. Tracy, M.D., Boston, Mass.

The Structure and Functions of the Nervous System

By George B. Lake, M.D., Chicago

The Nutritive Value of the Processed Milks

By James A. Tobey, M.S., Dr. P.H., New York City

Cisternal Puncture in Syphilis

By G. Cirincione, M.D., New York City

Technic of Applying Diathermy

By William A. Lurie, M.D., New Orleans, La.

Prostatic Disorders

By Edwin W. Hirsch, M.D., Chicago

Editorials

Dr. Joseph Colt Bloodgood
Prepare for Poliomyelitis
Military Service
Fellow of the A. M. A.

Love and Romance
Advertising a Profession
General Aspects of Cancer
Brief Reports

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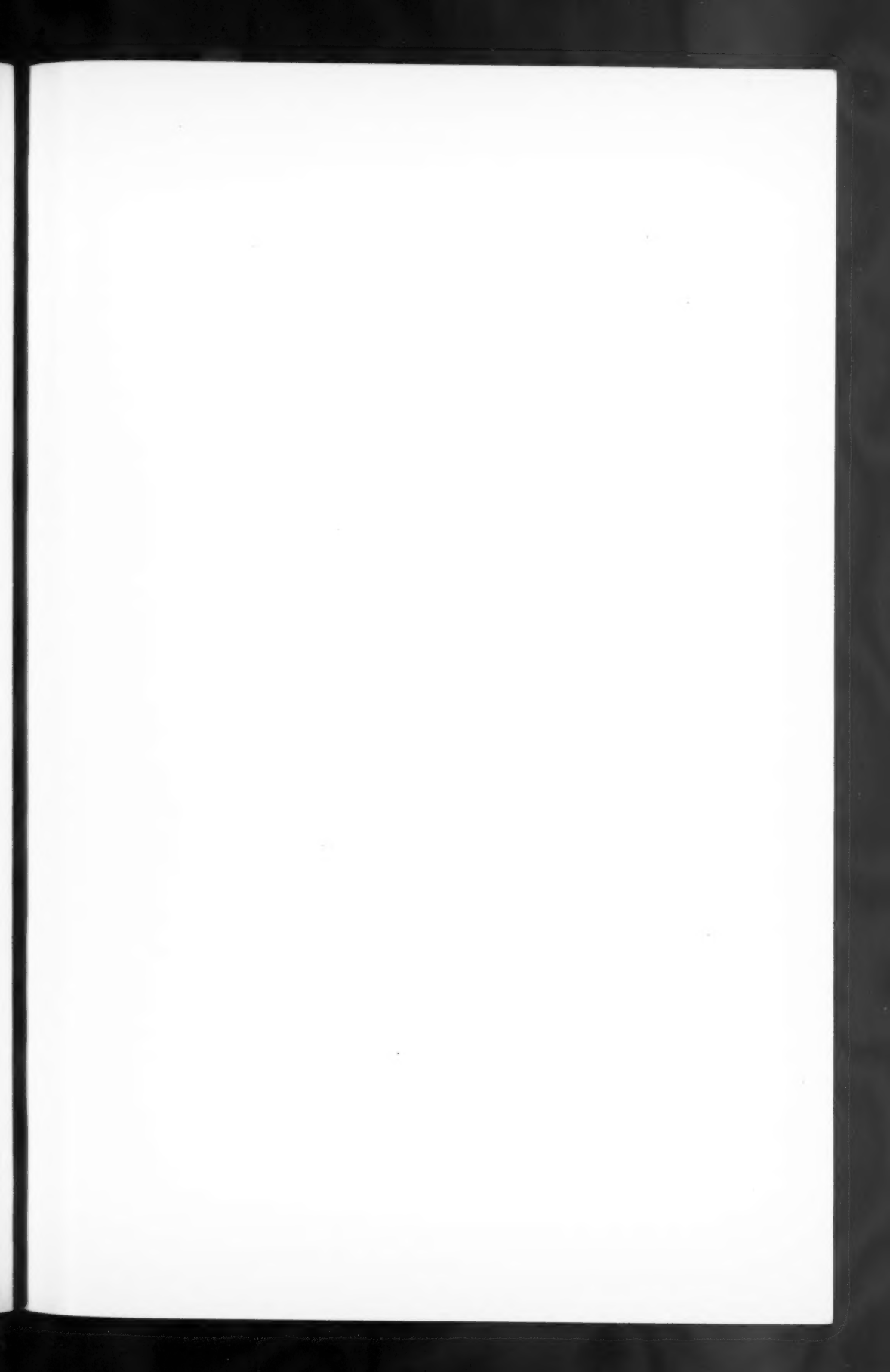
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JOSEPH COLT BLOODGOOD
B.S., M.D., F.A.C.S.

CLINICAL · MEDICINE AND · SURGERY

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Dr. Joseph Colt Bloodgood

IT takes a powerful dynamo (sometimes several of them) to operate a great machine; and certainly the mechanism by which the appalling death rate from cancer is to be reduced falls in this category.

One of the human dynamos which was to be used for this purpose came into being when, on November 1, 1867, in the city of Milwaukee, Wisconsin, a son was born to Francis and Josephine (Colt) Bloodgood. The boy was named, after his mother, Joseph Colt.

Having finished his studies in the elementary and high schools, young Joseph went to the University of Wisconsin, from which he was graduated as a Bachelor of Science, in 1888. Three years later he received his medical degree from the University of Pennsylvania.

After serving for a year in the Children's Hospital, Philadelphia, and Johns Hopkins Hospital, Baltimore, Dr. Bloodgood went abroad, for postgraduate study in various European clinics and hospitals, for a year, following which he returned to Baltimore and became, successively, resident surgeon and associate surgeon, Johns Hopkins Hospital, and associate and clinical professor of surgery, Johns Hopkins University School of Medicine, which last-named position he still holds.

During the War he held a Major's commission in the Medical Corps and did splendid work in the National Defense Council and the Red Cross.

Dr. Bloodgood is now chief surgeon at St. Agnes Hospital, Baltimore, and surgical consultant at a number of other institutions, in several cities. He is also a fellow of the American College of Surgeons, the A. M. A. and the American Association for the Advancement of Science, and a member of the American and Southern Surgical Associations, the Radiological Society of North America, the American Association of Pathologists and Bacteriologists, the American Association for Cancer Research and a number of other organizations, including the American Society for the Control of Cancer, of which he is a director and a member of the executive board.

From the beginning of his medical career, Dr. Bloodgood was interested in cancer, and this interest grew, progressively, and was fed by constant clinical, laboratory and library studies of the disease, so that, for more than twenty years, he has devoted his entire time and energy to this one condition and has become internationally known as one of the foremost authorities upon it.

This has come about because of the espe-

cial endowments of the man. His parents bequeathed to him a big, powerful body (he is over six feet tall and massive, but not obese) and an immense native fund of energy. His cosmic past gave him the keen, inquisitive, perceptive and logical mind of an organizer. To these was added an immense enthusiasm for the special work he is doing.

At sixty-three years of age, Dr. Bloodgood does, day after day, a volume of work which would appal most men of half his age. In addition to his surgical operations (which are many), he spends time in his four-story private office every day, seeing patients from all over the country and keeping his hand upon the large and highly organized office staff which looks after his huge correspondence and the details of his literary and lecturing activities, which alone, are enough to fill the life of an ordinary man.

But this is not all. For years he has gone daily to his laboratory and has personally studied and passed upon any pathologic specimens regarding which there was any doubt in the minds of his assistants.

Since his educational efforts and those of others working along the same lines have begun to bring before him patients in the very early stages of cancer, Dr. Bloodgood has felt keenly the necessity for a dye which will stain malignant cells and no others; but the funds at his disposal have been inadequate for the large-scale researches which are necessary to discover such a dye until, a few years ago, the Chemical Foundation gave a large sum for the building, equipment and maintenance of a laboratory for the prosecution of these studies, which is named, after the president of the Foundation, the Garvan Experimental Laboratory of Johns Hopkins University, and of which Dr. Bloodgood is director.

It is to be hoped that the powers of this man who has done so much for the progress of the healing art may be spared to him, undiminished, for many years, so that

the world may profit still further by his fund of knowledge, experience and wisdom.

Dexterity and insight come most often on the heels of immense practice.—WALTER B. FITKIN.

PREPARE FOR POLIOMYELITIS

LAST autumn, cases of poliomyelitis (infantile spinal paralysis) were reported from a number of places, scattered all over the country. When the frosts came it faded out, as it always does; but the disease is not dead—in fact, this is what the epidemiologists call the pre-epidemic stage. As the warm summer weather comes on, there is reason to believe that the disease may assume disturbing proportions in our morbidity and mortality reports.

This is not a calamity howl, but simply a suggestion to sane and foresighted physicians, to make themselves and their equipment ready to cope with this invader when it strikes, for *speed of action* is a large factor in the successful management of these cases.

Poliomyelitis is rare enough so that a good many physicians have never seen a recognized case, while many thousands have seen only one or two cases. It would be well for every doctor to get down his books and study the *early symptoms* very closely. An early diagnosis (in the pre-paralytic stage), followed by active and intelligent treatment, can frequently save a sufferer from short or long; complete or partial paralysis.

The first thing to do is to put every patient suspected of having poliomyelitis to bed, and *keep him there* until it is certain that he is *not* suffering with this disease. This course, rigidly followed out, will obviate many cases of paralysis.

It is the general belief, at present, that blood serum from human beings who have recovered from the disease is the most effective treatment. Pooled serum from supposedly normal adults has also given good results, probably because abortive forms of the disease (without paralysis) are more

common than is generally believed. Horse serum, prepared after the Rosenow method, has been recommended and is worth trying, if human serum is not available. This last is a concentrated and readily-available commercial product.

The disease will not, in all probability, assume epidemic proportions before July (if it does so at all), and this advance suggestion will give foresighted physicians an opportunity to locate immune persons, so that a supply of their serum can be obtained promptly; or to arrange for securing a supply of pooled, adult human serum; or, at least, to make sure that their pharmacists and hospitals have a stock of the Rosenow horse serum on hand.

Advance preparations of this sort may be the means of winning the gratitude of many persons and of building a reputation for judgment and vision which will prove extremely valuable.

Keep your doubts to yourself, and give the patient the benefit of your decision.—Oliver Wendell Holmes.

MILITARY SERVICE

WHEN most people think about military service, a highly distorted and inaccurate picture of our pitifully tiny (though highly efficient) Regular Army comes before their mind's eye. Better-informed individuals (whose numbers are few) include a more or less hazy idea of the National Guard and Organized Reserves in their picture.

A semi-official brochure, published, as a text, by the General Service Schools, Fort Leavenworth, Kans., and entitled, "The Military Organization of the United States," describes our fighting force in words which will come as a distinct surprise, or even a shock, to about ninety-nine percent of those who read them.

"The military forces of the United States consist of all citizens of the United States, male and female, who are able to render military service in any capacity, direct or indirect, as combatants or non-combatants."

So it appears that practically all of us, whether we like it, or even know it, or not, are actually a part of our Country's fighting forces.

Such being the case, the question arises, whether, in case of a national emergency, we would be willing to be part of the ignorant and, perhaps, unwilling rabble which would be herded to the Colors by the draft, or would prefer to be among those prepared and trained individuals who, at the call to arms, will be ready to step at once into positions of responsibility and honor and help in organizing and directing the herculean task of mobilization.

Realizing that many superior men will choose the latter course, the Government has provided the means for instructing and training such persons in the duties they would be called upon to perform in a national emergency, through the instrumentality of the National Guard and the Organized Reserve.

Every physician who is normally equipped with patriotism and self-respect, owes it to himself, as well as to the Nation, to be ready to do his part in an adequate and capable manner, and therefore should allot a certain part of his time and energy for taking a share in the activities of one or another of these schools for the training of officers.

For a physician, dentist, pharmacist, sanitarian, laboratory technician or other person connected with the practice of medicine, the first step is to apply for and obtain a commission in that corps of the Medical Department of the National Guard or Organized Reserves for which his abilities and education fit him. When commissioned, he owes it, to himself and to his brother officers, to join the Reserve Officers' Association.

The next thing is to join one of the inactive-duty study classes, which meet regularly, from October to May, in various places, and learn about the duties he may be called upon to perform. If no such

class is within reach, he should enroll for one or other of the numerous correspondence courses which are now available, and do the work required, sincerely and promptly, as a definite, personal duty.

Having fulfilled these requirements, he is eligible to be ordered to one of the summer training camps, where, while doing a patriotic service, he will also have a delightful and stimulating vacation, not merely without cost to himself, but actually on the status of an active officer, receiving the full pay and allowances of his grade during the time spent.

Those who have not yet availed themselves of this splendid opportunity should write, at once, to the Surgeon General, U. S. Army, Washington, D. C., for full particulars, and should then lose no time in meeting the requirements laid down for becoming one of the leaders, instead of an unrecognizable unit in the mob, in case the disaster of a major war should come upon us.

One must have loyalties. For if a man have no loyalties what can he have but profits? And though profits ease the road of the body for a little space, they can never ease the road of the mind.—Donn Byrne.

FELLOW OF THE A. M. A.

MISUNDERSTANDING of just what is meant by "membership" and "fellowship" in the American Medical Association seems to be fairly general, even among physicians who are fellows, and the distinction is rather important, especially to those who purpose to attend the annual meeting.

Any physician who is a member of his County and State Medical Societies is, automatically and with no action on his part, a *member* of the A. M. A.

Any member in good standing who pays to the National Association his dues of seven dollars a year (which includes a subscription to the *Journal*), becomes a *fellow* of the Association, receives a fellowship card and is, thereby, permitted to register at the big annual meeting and attend the sessions. Fellowship also admits

one to a number of other important meetings where attendance is restricted.

Remember that any *member* of the A. M. A. (and no one else) can become a *fellow* by paying his seven dollars; and no one except fellows can register at the sessions and take part in the meetings.

It is easier for a general, up in a balloon, with a perfect survey of the field, to maneuver a million men to victory, than for a sergeant to manage a platoon in a thicket.—Edward Bellamy.

LOVE AND ROMANCE

LOVE between a man and a woman is not all or chiefly romance (as Walter Lippmann so well perceives when he says, in the "Preface to *Morals*," that, if love is to last, a man and a woman must, not merely love each other, but must also love many things in common and together), though romance is a highly desirable component, whose retention is worth serious study and regularly renewed effort. Companionship and loyalty are the other and, in the long run, the basic ingredients.

On the other hand, love, as it is ordinarily understood, has no monopoly on romance, though it is, no doubt, for most people, the most readily available source of that delectable sauce of pleasurable emotion which makes life sapid and worthy of being pursued with eagerness.

Where, then, is one to find romance who, for one reason or another, has been denied love or who, having had it, is finding that its nectar has been drained away by reckless spending without renewal from the perennial fountain of tenderness or congealed by the icy wind of uncongeniality, once the fire of passion, which kept it warm at first, begins to flame less vividly than it did at its kindling?

The second easiest and readiest source of romance is travel, either in person or vicariously, through books and pictures. Richard Halliburton builded well, on the solid rock of psychology, when he constructed his widely-sold tales.

Following this is the eager pursuit of a hobby—any hobby is better than none, but the ideal avocation is one of a creative character—the planning, making or building of something useful or beautiful or both. Such a line of activity is capable of filling an otherwise empty heart fairly adequately.

And then there is religion—*real* religion, what Avis Carlson calls "friendship with the universe," not merely the chilly adherence to certain rites and dogmas imposed from outside. This implies the gaining of some real knowledge of what makes the wheels of life go round; and that, in turn, means more than a merely superficial study of science and philosophy.

Last and steepest of the paths which lead to high romance is genuine, solid *thinking*—hewing a road, by sheer, individual effort and sweat of the brain, through some intellectual jungle which, so far as you know, no human mind ever penetrated before—John Dewey's "creative thinking." If one has the thews and sinews for such climbing and the lungs to breathe in those clear, fogless altitudes, this is the most thrilling adventure of all; but it is not for the multitude, at this stage of humanity's evolution.

What, then, is the course which will bring the greatest number of people to the Haven of Heart's Desire?

"Take love when love is given,
But never hope to find it
A sure escape from sorrow
Nor a complete repose."

Thrill to the rush of the blood and the song of the heart, if you may; but remember that the house that is to stand must be buttressed foursquare to the winds of fate. Keep the glorious torch burning to the last possible minute, by zealous attention, but do not fail to kindle with it the hearthfire of loyalty and companionship, to warm you when it is no longer noonday.

Strengthen the walls with interest in, knowledge of and sympathy with the ways and works of the people of your own and other lands; with creative activities, keenly

pursued for the pure joy of it—or, at least, with an intelligent appreciation of the creative efforts of others, in painting, music, poetry or what you will; with the growing into a feeling of brotherhood with all that lives and a sense of the indwelling of the beneficent Power which creates and sustains all; and by developing, by daily use, those tremendous forces which most clearly show man akin to God—the mind, which reasons and builds, and the will, which is the irresistible drive of desire directed from within.

So shall you ascend the throne of the Kingdom of Romance, to which every human soul is heir, if he will boldly and wisely claim his birthright.

To believe in immortality is one thing, but it is first needful to believe in life.—Robert Louis Stevenson.

ADVERTISING A PROFESSION

IN THAT remarkably big little book, "Dedaelus," J. B. S. Haldane has made the statement that, in the entire history of humanity, with all its record of the immense multiplication of mechanical inventions, only four biologic inventions have been made by men, with a fifth (birth control) now on the way. He might have added, had he been so disposed, that psychologic inventions have also been few in number. One of the most recent of these (look up some files of magazines of twenty-five or fifty years ago, if you doubt this statement) is advertising.

Today, practically every successful maker of a thing or renderer of a service (except, always, the orthodox practitioners of the healing arts) has founded and is developing that success by bringing the commodity he has for sale to the attention of the public through advertising of one sort or another, some of which is excellent, some rotten, and the bulk of it somewhere between.

The advertising of things needs no defense as sound and ethical business prac-

tice (though some of the methods used are open to question or reproof); and the advertising of services, such as that done by the insurance and telephone companies, and even by the advertising men (who are definitely professional persons) themselves, is looked upon as right and proper.

Physicians are inclined to berate the immense numbers of people who obtain their medical advice from the newspapers, from quacks and cultists and from the neighborhood gossip, and their remedies out of nostrum bottles. These people deserve our pity, rather than our reproaches, and are a shame to our profession, for most of them would prefer to have sound medical advice and attention, if they knew what Scientific Medicine has to offer them and where to obtain the services of a reliable physician. This knowledge we have withheld from them, because of a superstitious fear of self-laudation, which has been handed down, from bygone days, when it may have had a rational basis, into this fourth decade of the twentieth century, where it is an anachronism.

The difference between a professional man and a laborer is, from the standpoint of this discussion, largely one of taste. The ditch-digger wears greasy and tattered overalls, gargles his soup, eats with his knife, chews tobacco ostentatiously and swears obscenely—and is perfectly in character. The teacher, preacher, lawyer or doctor who would do these things would be de-classed; but that does not mean that these professional persons may not wear clothes, take nourishment, enjoy the solace of the "Indian weed" and express themselves with vigor and pungency, provided they do all these things in a manner which society looks upon as seemly.

What the public needs, today, is not raucous and flamboyant blurbs on the billboards and in the street cars (or even state-

ments in the advertising pages of the newspapers), vaunting the skill of Dr. A. B. C. as a surgeon or that of Dr. X. Y. Z. as an accoucheur, but solid, reliable and simply-stated information as to what the medical profession in general has to offer them, *which they cannot obtain elsewhere*. People need to know about periodic health audits; the advantages of the prevention and early treatment of disease; the necessity for rational living and many other things which only the medical profession is fully qualified to teach them.

Such education calls for cooperative, informing advertising, done by *medical organizations*, as impersonal purveyors of vital knowledge, supplemented by the personal, direct instruction which can best be given by individual physicians in their daily human contacts. There should also be available in every community, at a place whose location is widely advertised, a list of all the capable, reputable and licensed physicians in the vicinity, with a brief and unvarnished statement of the type of practice in which each is engaged. This would obviate the reproach of the unnecessarily bereaved mother or husband who cries, "I did not know where to find a really good doctor."

Advertising for medical men may, then, be summed up, for this year (conditions may, of course, change at any time), as: Education of the people about all of Medicine, by all the doctors, working through and sponsored by their local, state or national organization; not fulsome puffs of individuals, instigated by themselves or their friends.

We must advertise the *medical profession*; not the personal powers and achievements of certain particular physicians, if we are to restore, to ourselves and our brothers, the success and opportunity for real public service which is, in almost all instances, so well deserved.

LEADING · ARTICLES

Examining and Advising Patients*

By JOSEPH COLT BLOODGOOD, M.D., F.A.C.S., Baltimore, Md.

EVERY member of the medical profession, whether in general or special practice, or whether connected with a hospital or clinic or not, must realize that what he learned in medical school about the diagnosis and treatment of disease must be replaced, very quickly after graduation, by new methods which have been discovered or verified since he left the school.

The fundamentals, the medical sciences—anatomy, physiology, chemistry, histology, embryology, physiologic chemistry and pathology—have undergone less changes than have diagnosis and therapy in clinical medicine and surgery. There have been many more changes because of new discoveries in the past twenty-five years, and especially in the past ten years. There have really been fewer changes in fundamental surgery; that is, in asepsis, antisepsis and the details of operative technic in the past twenty-five years, than in medicine. Methods of anesthesia have witnessed many new drugs to relieve pain during the operation, but surgery as a great art, except in a few areas—brain, chest and urology—almost reached its limits a quarter of a century ago. But the examination necessary for that wonderfully conceived and executed surgical operation, has changed entirely.

The clinical diagnosis, or the recognition of disease by its naked-eye appearance, has been largely replaced by the microscope, used for frozen sections of tissues removed in the operating room; by the x-rays, employed in almost every region of the body; and by new tests which can be carried out only in a modern laboratory. We depend upon the Wassermann blood reaction for the recognition of syphilis and upon the meta-

bolism test to indicate whether the thyroid gland is toxic. We have much finer tests for the function of the kidney, than the examination of urine. The estimation of blood sugar is a much more accurate index of sugar metabolism than the presence or absence of sugar in the urine.

In spite of the fact that there was a time when the physician recognized disease by obtaining the history of the patient, from him or his family, and by making an examination with and without the stethoscope introduced by Laennec, this day is over, and it is entirely due to the fact that, in civilized countries, the people have become familiar, largely by the education by the medical profession through the press, with the fact that the chances of being cured or relieved, when a disease can be recognized by the clinical examination only, are so small that it is a question whether it is worth while having such an examination.

CULTS AND PATENT MEDICINES

The success of treatments other than those by the medical profession has been due to the fact that, when sick people wait until the disease can be recognized clinically, without the aid of any of the newer methods of diagnosis, cures are rare, if the disease is hopeless and, if the disease is not hopeless, the majority might recover without treatment. The success of all patent medicines and quack drugs and methods of treatment, from the time of Hippocrates, Mesmer and Mrs. Eddy up to date, and the existence of cults for the cure of disease, all rest upon the fact that, when the uninformed, ignorant individual, with and without fear or with or without mental deficiency, delays months or years after the first symptom of warning, no method of

*Read before the Lawrence County Medical Society, Newcastle, Pa., June 13, 1930.

treatment offers much and any method of treatment may get the credit of those who would get well without any treatment.

It is remarkable, how long the medical profession waited before they realized that the cure of disease depended as much upon the education of the people as upon the education of themselves. This has been especially true in the past quarter of a century. In these years, methods of diagnosis and treatment have been developed to such an extent that, if the people seek advice the moment they are warned, no patent medicine can compete with modern Medicine, and no individual, not educated as members of the medical profession must be educated today, can compete with the modern, trained doctor.

Why do patent medicines, quack treatments and individuals outside the medical profession, who claim to diagnose and treat disease, exist today? First, because there is still a large number of uninformed and ignorant people. The second factor has only been realized by the medical profession in the past ten or twelve years.

This factor is: When you inform large numbers of people about the earliest symptoms of disease in any part of the body and, in addition, urge and influence them to come for an examination at once, in from sixty to seventy-five percent of those who correctly follow this advice, the condition which caused them to come for examination will be of a character that it would recover, even if unrecognized and untreated. Therefore, if they consulted a dishonest member of the medical profession or one, not only dishonest but not a member of the medical profession, or an ignorant fanatic who honestly believed that he had a cure, or took patent medicines purchased in the drug store after reading the advertisements, there would be from sixty to seventy-five percent of apparent cures. But, among the remaining forty or twenty-five percent, in which it would be essential to have a correct diagnosis, to be followed by the proper treatment, there would be no cures, except those diagnosed and treated by members of the medical profession, properly trained.

ENLARGING REQUIREMENTS

The increasing difficulties of carrying on properly the examination of a patient at his first visit, no matter what the complaint, is entirely due, today, to the tremendous pub-

licity the medical profession has succeeded in getting into the public press, in the news columns and in the best editorials. The training of the majority of medical men in practice today, which they received in the medical schools more than twenty-five years ago, is inadequate for this new demand, and even if these medical men have attempted in every way to keep up with the rapid progress of modern Medicine, the diagnosis and treatment of all human ills, present increasing difficulties.

Let me give a few examples, because I have been in practice forty years. Let us compare the conditions which I observed in Johns Hopkins Hospital, in 1892 to 1900, with those in my own clinic today, since 1920.

Breast: In the first decade, up to 1900, there was no difficulty whatever to palpate a lump in the breast, because every woman waited months or years after she felt a lump. There was rarely any difficulty to distinguish the lump that was cancer from the one that was not. In less than one percent of the cases did we require a microscope to discover whether the lump was cancer or not. In that period, eighty percent of the uninformed women who delayed had cancer, the majority of them in the late stage; over one-half in the hopeless stage; and less than ten percent were cured by an operation which was just as thorough and practically just as safe as those we perform today.

Since 1920, due to the education of women through the public press, in seventy-five percent of cases, the women who think they have a lump in the breast are found, on most careful palpation of the breast, to have no such lump. The increasing difficulty, then, is, first, to find a lump in the breast, when before there was no such difficulty. When we do find a definite lump, in twenty-five percent we know that the chances of cancer are less than one-half, and we know that, in most cases, we will not be able to tell whether the lump is cancer or not until we explore it, remove it and make a frozen section of it in the operating room. The surgery offers no difficulty whatever: It is the diagnosis! To distinguish an indefinite lump from a definite lump in the breast, and, in the frozen section made in the operating room, to recognize cancer cells from cells that are not cancer, are the two new great difficult problems that our predecessors did not have.

What I have just said of the breast, is equally true of the mouth, the skin, the uterus, all the organs within the abdomen, the prostate, the bladder and kidney, and the bone and soft parts, including tumors and diseases within the brain and spinal canal. There is no doubt that the education of the public, through and with the cooperation of the press, has made diagnosis much more difficult, treatment simpler and easier, for both doctor and patient, and the probability of relief or cure very much larger. The more people who come in this early stage and the quicker they learn of these results, the more quickly will other methods of treatment and all other individuals outside of the medical profession who attempt to treat human ills, disappear.

There is another difficulty in the examination of the patient who seeks advice quickly after the first warning. No matter in what region of the body the trouble is apparently seated, with few exceptions there must be a *complete examination*. In every individual the teeth, tonsils and sinuses must be inspected; the blood and urine must be examined; in every woman who has borne children, the cervix must be looked at with a good light, in addition to a pelvic examination by palpation.

It is almost impossible, today, to make this complete examination unless the physician is connected with a hospital or is in a group properly equipped with all the modern diagnostic methods. When the doctor practices alone, he should do as much as his training and experience allow, and then get the help of his colleagues in the different specialties to aid him in the complete examination. There should be no difficulty in organizing the medical profession to meet this demand. There is no question that we have the evidence to prove that the largest percentage of cures will be among those individuals who seek an examination the moment they are warned and who receive, not only a proper, but a complete diagnostic study.

THE INCREASING DIFFICULTIES OF PERIODIC EXAMINATIONS

In the first place there will be, in a periodic examination, all the difficulties that are met with in the group of patients who see their doctors the moment they are warned. The first question to settle is, how far the examination should go when patients come

to their doctors once a year. There is no doubt that the first examination should be as complete as possible, but there is no evidence that we should roentgenograph the entire skeleton, nor use the proctoscope, nor take x-ray pictures of the stomach and gall-bladder, unless there are definite symptoms to suggest this.

The periodic examination will vary with the age of the patient, with the sex and with the previous knowledge of the individual by the physician. The point I wish to emphasize is that, if it is well done and for the best protection of the individual, the difficulties will increase until we find out, by the follow-up system, what is the best method of making a periodic examination. It seems to be the consensus today, that it should be done by the family physician, as far as he can go by himself, and then he should judge as to the necessity of further examinations by specialists.

There seems to be no question that the expectant mother should select her obstetrician at once, whether one in private practice or connected with an obstetric clinic, and should remain under his care until a certain time after the baby is born. Then she should continue with annual periodic examinations, which had better be done, if possible, by the obstetrician who looks after her during childbirth. The child should be under the care of a pediatrician, because it is during these early years that diet is most important. The obstetrician should be responsible for the prophylactic drop of silver nitrate in the infant's eyes after birth; the pediatrician for vaccination against smallpox, toxin-antitoxin for diphtheria and other preventive measures, as they arise. The mental care of the child should not be overlooked. The care of children in the preschool years is too much neglected, by rich and poor. Parents must be taught to think in terms of preventive medicine and to urge their doctors to do the same.

The chief thing to emphasize, for adults, is the periodic examination of women who have borne children, to give them protection against cancer of the cervix; the supervision of their teeth by dentists, especially the early recognition of dental-root abscesses by x-ray examination; the watching of blood-pressure, urine and blood sugar. The most important thing, in children, is the supervision of the teeth, tonsils, adenoids, food, weight, exercise, faulty positions, eyes,

mental hygiene and habits. It is a good plan for men over forty to have a thorough examination of the prostate, to be repeated as often as the specialist may think necessary.

One of the chief difficulties of periodic examinations is to get the people to have them done; and it must be done in such a way that they will realize their value. It must not be overdone. The cost must be within their means to meet. For those who cannot afford this service, it must be developed in clinics and dispensaries about hospital centers. When a number of physicians combine, it should be possible to give these examinations to everybody, at a price within their means to pay, and at the same time with proper financial return to the clinic; and these clinics should be able, in addition, to take care of a fair number of patients unable to pay.

PREVENTIVE MEDICINE

The fact is that, today, we have many methods of prevention that are not properly employed, by physician or patient, and that the improper employment is largely neglect, chiefly due to the fact that the medical profession still thinks and practices in terms of curative medicine, instead of in terms of preventive medicine. This can be changed only by the medical schools emphasizing more preventive medicine, and by the entire press—daily papers, magazines, journals—repeatedly informing the people of the value and necessity of the older and new preventive measures, as well as of the older and new curative drugs and measures.

WHAT THE DOCTOR SHOULD SAY TO HIS PATIENT

In 1913, in my first address to the public on cancer, I urged them to fear the beginning and not the end of cancer. This is true today. A little fear in the beginning, which urges the patient to seek advice at once, is like pain, Nature's best method of

warning. Fear in the late stage of cancer only adds to the discomfort.

Fortunately, if you broadcast the various warnings that may be symptoms of the beginning of cancer and present it in the proper way, that fear in the beginning, which is the urge for the immediate examination, will be created and people will be given their chief protection against cancer and many other diseases. But it is essential, when these patients come for examination in these earliest stages, whether they have cancer or not, for the doctor immediately to allay fear; and this rests upon what the doctor and all his associates and assistants in the office or clinic say to and do for that patient.

The members of the medical profession must also bear in mind that, if they give the best advice, it is just as much of a failure if it is not followed, as if the worst advice were given and followed. From my experience during these forty years, I have recorded that the later the stage of the disease, the less the difficulty in managing the individual and the recognition of the trouble. The greatest difficulty is to relieve or cure the disease. The earlier the stage, the greater the difficulties in managing the patient, allaying fear, making the correct diagnosis and getting the patient to follow advice, and the least the difficulty of treatment.

Never before in the history of Medicine could a trained physician do more for the protection, prevention and cure of disease, with an enlightened individual who seeks advice after the first warning or comes for a periodic examination; and never before have the difficulties been more for the physician and less for the patient. Preventive medicine and the enlightened patient are here. The medical profession must prepare to overcome these difficulties. Discoveries in the scientific medical laboratories of the world are doing their best to help them.

904 N. Charles St.

BUYING MEDICAL SERVICE

If the public will use intelligently the facilities offered it for keeping well, or when sick will buy its medical care as carefully as it does its automobiles, then will there be no complaint about the high cost of medical care.—DR. JAMES H. HUTTON, Pres. Chicago Med. Soc.

Observations on Comatose States

By WILLIAM COLE, M.D., Long Beach, California

IT IS not uncommon for any practicing physician to be called to see a patient in the comatose state. In these cases it is of the utmost importance to make a correct diagnosis as to the probable cause. Early diagnosis allows us to institute the proper treatment at once. This is vitally important in many instances, if we hope to save the patient.

This brief discussion of comatose and stuporous states is not for the purpose of eliciting new facts, but to familiarize us with data already available in medical literature. The importance of comatose conditions, I believe, justifies this review.

DEFINITION AND SYMPTOMS

Coma may be defined as any state of prolonged unconsciousness, in which the patient is unresponsive to external stimulation.

The general symptoms of coma are: profound unconsciousness; insensibility to external stimuli; loss of locomotion and motor power, with slow, irregular or stertorous breathing, often of the Cheyne-Stokes or Kussmaul types. At times there is gradual failure of respiration. The pupils may be contracted, dilated or irregular in outline. Unilateral or bilateral paralyses may occur. There is often pallor or congestion of the face and trunk, with irregular, slow and full or a rapid and weak pulse. Any combination of symptoms may be added which may arise from disorderly action of the brain centers, especially those governing respiration and circulation. This gives rise to wide variation in the clinical picture.

CAUSES OF COMA

The ordinary causes of coma are about as follows: (This list has been compiled from the works of Cabot, Martinet, French and other writers.)

1.—Poisons:

A. *Exogenous*: Alcohol, opium, veronal, chloroform, carbon monoxide, belladonna, strychnine, insulin shock, chronic form of lead poisoning, cannabis indica, cocaine, chloral hydrate, etc.

B. *Endogenous*: Uremia, acetone-emia, diabetic acidosis, prolonged starvation.

2.—Cerebral Lesions:

A. *Vascular*: Apoplexy, thrombosis, embolism, etc.

B. *Inflammatory*: Meningitis, encephalitis, syphilis, general paralysis of the insane, etc.

C. *Neoplastic*: Tumor, abscess, patches of sclerosis, gumma, etc.

D. *Traumatic*: Fracture, concussion, compression, brain wounds.

E. *Unclassified*: Epilepsy, hysteria, shellshock, etc.

3.—*Fevers*: Typhoid, typhus, cholera, dysentery, malaria, yellow fever, infectious jaundice, lethargic encephalitis, poliomyelitis.

4.—*Metabolic disorders*: Pellagra, primary anemias, diabetes, Addison's disease, Raynaud's disease, hepatic cirrhosis, chronic nephritis with uremia, etc.

5.—*Extremes of temperature*: Sunstroke, heat exhaustion, excessive cold.

6.—*Loss of blood*: Ruptured ectopic gestation, postpartum hemorrhage, hemoptysis, hematemesis, duodenal or intestinal bleeding, ruptured aneurysm or rupture of blood vessels, either from disease or injury.

7.—*Circulatory causes*: Aortic regurgitation, Stokes-Adams disease, simple syncope.

8.—Malnourishing.

Many other causes could be added to the list. In fact, any severe systemic disease may give rise to coma, especially if it is of a prolonged and debilitating character. In many cases death from coma occurs before an accurate diagnosis is possible.

INVESTIGATION OF COMATOSE STATES

In examining a comatose patient, first note if there has been a *traumatic injury*, such as a fall or contusion, preceding the onset of coma. If so, one thinks immediately of brain injury or skull fracture. Obviously a skiagram would be of great service in a case of this kind. Inquire from the patient's friends if he has had similar seizures previously. If so, one would naturally think of epilepsy, uremia, hysteria or general paralysis of the insane. The patient may be an alcoholic and may have been on a spree when the coma developed.

A clear history of previous syphilis is obviously important; likewise a diabetic his-

tory or the fact that the patient has been taking insulin. Previous symptoms, such as headaches, nocturia or albuminuria point to chronic nephritis, arteriosclerosis or uremia.

The conditions under which coma supervened should be learned from bystanders; also the appearance at the time of the attack, the patient's movements and the direction and force of any fall he may have had. Did the coma come on gradually or suddenly? Was it preceded by convulsive attacks? Did the patient make any outcry before passing into coma? Did he grind his teeth and bite his tongue? Did he soil his clothing during the attack? Was his previous health good or bad? Were his actions preceding and following the attack those of a reasonable human being or otherwise? Had he been taking any drugs? Is there any reason to suspect foul play? These and many other questions may help us in our decision as to the probable cause of coma.

In head injuries, as Purves Stewart points out, it is important to determine, if possible, whether the injury caused the coma or vice versa. A man falls from his automobile, for instance, and strikes his head. Did he fall because he became unconscious from cerebral hemorrhage? His friends may be able to help us with their observations. The order of symptoms in head injuries is important. In concussion, the coma is immediate and focal symptoms, such as aphasia or paralysis, arise later. In cerebral hemorrhage, an interval of hours or days may elapse before coma supervenes and focal symptoms often antedate the coma. The age of the patient is important. Simple fainting spells or epilepsy rarely begin after 40 years; whereas general paralysis of the insane commonly does. Poisoning cases are usually seen under conditions which make the history and diagnosis clear, the one exception being alcoholism.

Cases of pneumonia in alcoholics are often treated and die as common drunks, because the temperature and the lungs are not investigated. Very often, too, an apoplectic is plied first with alcohol, or apoplexy occurs during a spree, and this makes it difficult to distinguish between the drunk and the dying. *The history is of the greatest importance* and is usually more valuable than the physical examination. Cabot states that most of the mistaken diagnoses in comatose or convulsive states are due, in

his experience, to the lack of a good history.

PHYSICAL EXAMINATION

An exhaustive physical examination is essential. The presence of hemiplegia, with decreased muscle tone on one side of the body, points to cerebral hemorrhage or thrombosis; possibly softening from general paralysis of the insane. A positive Babinski or ankle clonus on one side, without other signs, points to hemiplegia; so does an exaggerated knee kick.

The presence of fever points to an infection or an inflammatory brain lesion. Very high temperatures point to sunstroke or thalamic tumors. The absence of fever practically excludes infections or inflammatory lesions of the brain, as well as heat exhaustion.

A slow pulse occurs, especially in brain tumors, cerebral compression from depressed fracture, injuries or infections of the brain and opium or other narcotic poisons; also in Stokes-Adams disease.

Sugar in the urine in large quantities, especially if associated with acetonuria, points to diabetes. This is practically a certainty if the blood-sugar is found to be high and air hunger is present. The Kussmaul type of breathing in diabetic coma, once seen, is never forgotten. A transient glycosuria is often caused by head injuries however, and a hemorrhage into both lateral ventricles will cause a large amount of sugar to appear in the urine. As usual, the history helps largely here.

Albumin in the urine, with or without casts, suggests uremia or renal disease, but occurs commonly in any head injury and is not of much diagnostic importance. Albuminuric retinitis, plus a high blood pressure, enlarged heart, ringing second aortic sound and a full, bounding pulse, are almost pathognomonic of uremia due to chronic nephritis. This is a certainty if the blood urea and non-protein nitrogen are likewise high.

A blue line on the gums, plus moderate anemia and basophilic stippling of the red cells, practically always means chronic lead poisoning, with encephalopathy.

Clear evidence of syphilis, such as perioritis, adenopathy, pigmented scars, mucous patches or an eruption, are important and give us much evidence of cerebral lues.

Examination of the cerebrospinal fluid may disclose blood, pointing to fracture; diplococci, indicating meningitis; lympho-

cytosis, pointing to tuberculous meningitis; or xanthochromia, indicating cistern block, due to medullary tumor, etc.

Unequally dilated pupils point to brain hemorrhage or general paralysis of the insane. *Contracted pupils* often indicate opium poisoning or pontine hemorrhage. *Dilated pupils*, unresponsive to light and with absent conjunctival reflex, are often seen in uremia; likewise in cocaine or chloral poisoning. *Fixed dilated pupils*, associated with convulsions, suggest epilepsy or poisoning by strychnine or belladonna. The pupils in alcoholism are often dilated, but respond to light. In hysteria and malingering, the pupils respond promptly to light and the patient resists separation of the lids. *Conjugate deviation of the head and eyes* has little diagnostic value, although at times the eyeballs may turn towards the side of the lesion. The *ophthalmoscope* will often demonstrate a choked disc in brain tumor cases. It is also invaluable in recognizing diabetic or albuminuric retinitis.

Bloody froth about the lips and a bitten tongue often point to epilepsy, but may be present as well in uremia or apoplexy.

A study of the pulse helps a little. In cerebral compression, from any cause, it is usually slow; in uremia and apoplexy it is full and of high tension; in hysteria it is rapid, full and bounding, but not of high tension; in diabetic coma it is often rapid and rather small in volume.

Examination of the heart and vessels may show cardiac hypertrophy and arteriosclerosis. If mitral stenosis is present, one naturally thinks of embolism of the cerebral vessels. Ruptured aneurysm may be found on examination. This may at first simulate an acute gall-stone attack. The gall-stone patient, however, will recover; the patient with ruptured aneurysm will not, so a little time will clear up the diagnosis.

Examination of the lungs may reveal a large pulmonary infarct, massive pleural effusion, pneumothorax or a ruptured lung abscess. These are unusual causes of coma, but may be encountered and should be thought of in a doubtful case.

Smelling the breath may help. Alcoholic odor suggests drunkenness, but does not prove it. The disagreeable urinous or ammoniacal breath of uremia is fairly characteristic; so is the acetone-sweet breath of diabetes. Many poisons impart a characteristic odor to the breath, especially chloroform, phenol, ether or hydrocyanic acid.

Many other points could be brought out bearing on the differential diagnosis of coma, but I think I have mentioned enough to be suggestive.

COMMONEST CAUSES

Martinet says that the most usual causes of coma in private practice, in the order of their frequency, are: (1) Brain hemorrhage; (2) uremic coma; (3) alcoholism; (4) post-epileptic states; (5) diabetes. These conditions account for 95 percent of cases of coma seen in general practice. The other 5 percent are caused by the conditions mentioned previously.

French says that it is very important to arrive at a correct diagnosis of the cause of any coma, so that adequate treatment may be carried out. For instance, cerebral compression, due to meningeal hemorrhage, calls for immediate trephining. Poisoning cases may require stomach lavage, artificial respiration, antidotes, stimulation, hot packs, etc. Diabetic coma calls for huge doses of insulin, intravenous injections of dextrose, at times, also elimination and the forcing of fluids. Uremia may demand venesection. Absolute rest is indicated in cerebral bleeding, and so on. Coma being only a symptom, its treatment naturally calls for treatment of the cause.

In conclusion, it may be said that the dividing line between different states of unconsciousness is hazy and ill defined and one often merges into the other. Few of the differential diagnostic signs of coma are clear and unmistakable and no condition calls for more display of diagnostic acumen and common sense on the part of the physician.

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The Management of Epilepsy

By EDWARD A. TRACY, M.D., Boston, Mass.

AS EPILEPSY is comparatively infrequent (about four cases occurring in every thousand individuals), the average physician, unless the malady strikes near home, has notions of the disease that were prevalent some two thousand years ago. If asked what epilepsy is, he will answer, "Convulsions, fits"; and so would have answered Hippocrates, who first wrote about the disease. But since that time, and more especially within the past hundred years, the mystery of the malady has attracted persevering investigators and at length the wall of ignorance surrounding the disease has been breached and success in the management of epilepsy seems within our reach.

The disease is progressive and success in its management depends, in the main, upon correct treatment in its early stage. This stage, termed incipient epilepsy, has not been sufficiently considered and for that reason is now often overlooked. The archaic idea that epilepsy connotes convulsions only, obscures the progress which has been made in this special field of research. The malady has other symptoms, especially in its beginning, which are not generally recognized as belonging to the syndrome.

The phase of the disease which has been termed incipient epilepsy can best be illustrated by examples and I shall briefly describe, therefore, a few of the many cases that have come under my personal observation. Before doing so, however, it may be well to discuss the objective signs of the preconvulsive stage.

OBJECTIVE SIGNS OF EPILEPSY

The white spots are spots of vasoconstriction on the cheeks and forearms. They vary in size from that of a pin head to that of a split pea, and are caused by excess of nerve stimuli passing down the vasoconstrictor fibers involved in the spot. The spots indicate a diseased condition of these particular sympathetic fibers, a hypertonia, (the vasoconstrictors are sympathetic neurons). One may have white spots of vasoconstriction without having epilepsy; but one cannot have epilepsy without having white spots.

The epileptic vasomotor reflexes are particular abnormalities of the vasomotor skin reflexes. The characteristics of normal vasomotor reflexes were found by evoking them by means of a little instrument, the vasomotor tester. This instrument furnishes a measured stimulus—a pressure of two and one-half ounces—to evoke the reflex. On the cheek, for example, it was found that the white streak of reflex vasoconstriction did not appear sooner than twelve seconds, in normal individuals. In cases of epilepsy it has been found to appear on the cheek in six seconds, and in no other condition; hence it is termed an epileptic reflex.

Again, on the cheek the normal reaction to stroking with the tester is a white streak. In some cases of chronic epilepsy there is seen, in response to the tester, a diffuse area of vasoconstriction of a definite shape, and such a reflex is termed an epileptic reflex because, based upon a large series of observations, it has been found specific for the disease. On testing the vasomotor reflexes of the forearms, some have been found which are specific for epilepsy. Examples of both are illustrated in my book, "The Basis of Epilepsy."*

While the objective signs of epilepsy are of importance in giving us a key to the nature of the disease, showing it to be a progressive disease of the sympathetic neurons, and furnishing an accurate method for the diagnosis of the malady, the knowledge of them is not so essential for the practitioner as a knowledge of the symptoms of epilepsy, especially in its incipency. It is better to suspect the disease and treat it when it is readily curable, than to neglect treatment until it progresses and gives more severe manifestations of its presence.

CASE REPORTS

Case 1: S. G., a high-school girl, complained of headaches with occasional dizziness. The objective signs of epilepsy (white spots and epileptic vasomotor skin reflexes) were found present and her sister was informed that the girl had incipient epilepsy. The girl attended the clinic for four months and then, the symptoms having disappeared, she ceased to come, although advised to continue. Seven years later she was brought

*Richard G. Badger, publisher, Boston, 1930.

to my office for advice, having suffered from severe convulsions for the previous two years.

Case 2: B. L., a girl of 13 years, fainted in the dental clinic. She was referred to the epileptic clinic for examination, where her mother stated that this was the only time the girl had fainted. The objective signs previously mentioned were found present and the case diagnosed incipient epilepsy. The mother was informed of the diagnosis and promised cooperation in the child's treatment. After a year she ceased treatment, against advice, and two and one-half years later the girl had several attacks of convulsions in the school which she attended.

Case 3: A. J., a boy of 10 years, in the previous two years had fainted several times in church—he would suddenly turn pale and topple over. Examination showed the objective signs and his case was therefore diagnosed incipient epilepsy. His treatment was neglected and, eighteen months later, the boy had the first convulsive seizure in his life.

Case 4: H. J., a boy of 12½ years, gave a history of several attacks of sudden trembling, for a period of two months; then a fit; and later, recurring convulsions, some of them nocturnal, during a period of ten months. He then came to the clinic for treatment. The objective signs were present and, since all the symptoms had occurred within the year, his case was diagnosed incipient epilepsy and a favorable prognosis given. His treatment resulted in a cure, there being no symptoms, and no medicine given since then—a period of eight years.

Case 5: P. G., a school girl of 13 years, had had several fainting spells in school the previous year. The objective signs being present, her mother was informed of the diagnosis, incipient epilepsy, and warned of its seriousness if untreated. This was in last April, 1930. The mother failed to bring the girl for treatment, and on October 22, 1930, the school doctor reported that the child had a severe convulsion in school.

The cases reported above indicate some of the symptoms of incipient epilepsy and demonstrate that it can be accurately diagnosed before the occurrence of convulsions, if we give heed to the minor symptoms of the disease. These minor symptoms are: headache, dizziness, fainting, sudden pallor, sudden lapse of consciousness (as a staring spell—an "absence"), sudden nausea, sudden trembling or sudden weakness. "Suddenness," as Du Saule noted, with splendid acumen, "is the principal characteristic of all manifestation of epileptic origin." Cases exemplifying these symptoms have been observed by Tissot, Du Saule, Echeverria, Gowers, Gelineau, Féré and Turner, and all of the symptoms have been verified in cases treated at the Forsyth Epileptic Clinic, Boston.

Careful history taking in cases of chronic epilepsy will often reveal those minor symptoms of the malady as present for a more or less prolonged period before the first

convulsion. I meet with many such cases, and always with vivid regret that the disease had not been diagnosed and treated in the incipient stage, in which experience shows that it yields readily to correct management. Here is the history of a case recently brought from Montreal for treatment:

Mrs. S., aged 22 years. Her birth was normal; first tooth at 7 months; weaned at 14 months; talked at 12 and walked at 14 months; whooping cough at 2, measles at 4 and mumps at 5 years; menstruated at 14 years. Married in June, 1929. For two months before marriage she had occasional attacks of sudden nausea and weakness, which continued to occur until January, 1930, when she had her first convulsion, in sleep, with biting of the tongue. A month later she had a similar convulsion, and since then has had a dozen or more, mostly nocturnal. The intervals between convulsions have lessened, the last three having occurred within a period of two days.

This case illustrates the danger of ignoring the minor symptoms of the incipient disease. Had the malady been recognized during the first two months and correct treatment instituted and carried out for a year, or two at most, her recovery could have taken place and the marriage state might have been entered upon fearlessly. Now, the marital relationship adds to the difficulty of cure.

It has been mentioned that epilepsy is a progressive disease. All of the cases reported above show its progressive nature, when untreated. Turner¹, in 1907 declared epilepsy to be a "progressive, degenerative malady." Nonetheless, a prominent neurologist flatly contradicted this statement when discussing a paper of mine, nine years ago. That event was vividly brought to mind by the perusal of a recent paper entitled, "Neurosomatic Deterioration in Epilepsy," by Dr. Morgan B. Hodskins, superintendent, and Dr. Paul I. Yakovlev, assistant, in the Monson State Hospital for Epileptics, Palmer, Mass.—a paper commended to every investigator of epilepsy.

Research carried on by me, since 1915, gives constant evidence that epilepsy is a progressive disease of the *sympathetic neurons*. In the incipient stage, on testing the sympathetic fibers, they manifest but a slightly disordered action; while in the chronic convulsive stage of the malady, similar testing evidences a widely extended and more intensely hypertonic condition of the same fibers. It is to this condition of the sympathetic fibers that the objective signs of epilepsy (white spots and specific vasoconstriction reflexes) must be attrib-

1.—Turner, Wm. Aldren, "Epilepsy," London, 1907; p. 227.

uted, since they consist of areas of vasoconstriction; and all vasoconstriction phenomena in the skin depend on sympathetic neurons.

That the malady can be accurately diagnosed with the aid of these signs is demonstrated by the cases reported above. Moreover, the evidence of diseased action of sympathetic neurons, which can be demonstrated in every case of epilepsy, appears to have for its basis the pathologic condition of the sympathetic, discovered in this disease by Echeverria, and described by him in 1870².

TREATMENT

Although it has been shown that *Oenanthe crocata* (water hemlock) controls the sympathetic hypertonia and the symptoms of incipient epilepsy, so long as it is being administered, the cause of the hypertonia is not always removed by its use. There is an ample field for investigation as to what toxic substances or dietary deficiencies produce this hypertonia.

It seems reasonably certain that certain vitamins, whose absence results in nerve lesions, may play a part in the prevention of epilepsy; and it has been shown that the tissues of persons having grand mal seizures are often deficient in calcium. Sources of focal infection and local irritation should be sought for and treated until cleared up; but tonsillectomy should not be performed unless the tonsils cause mouth breathing and oxygen deficiency.

2.—Echeverria, M. Gonzales, "On Epilepsy," New York, 1870.

The treatment of incipient epilepsy which has proved successful at the Forsyth Clinic is, briefly, as follows:

Twenty (20) to 120 minims (1.3 to 8.0 cc.), according to the condition, of colloidal oenanthe are placed in an 8-ounce (250 cc.) bottle, with 10 grains (0.65 Gm.) of sodium benzoate (as a preservative); the bottle is filled with water; and a teaspoonful is administered after meals and at bedtime.

A level teaspoonful of powdered calcium lactate is given, with the juice of an orange, in one-half glass of water, one-half hour before breakfast and the last thing at night. A tablet of 1/10 grain (6.5 mgm.) of parathyroid extract is given with a glass of milk, at meals, for the purpose of fixing the calcium in the tissues.

The orange juice furnishes the vitamin C; vitamins A and D should be supplied by giving one or two teaspoonfuls (4 to 8 cc.) of cod-liver oil, after breakfast and supper; one-half to one cake of yeast or two of Harris' yeast vitamin tablets, twice a day, will furnish sufficient vitamin B.

For restlessness and severe motor symptoms, the patient should receive, each day, 10 to 40 grains (0.65 to 2.65 Gm.) of calcium bromide.

Patients report every two weeks during the course of treatment, which averages two years; and are kept under observation for several years after the medication is discontinued.

524 Commonwealth Ave.

MILITARY OBLIGATIONS OF THE MEDICAL PROFESSION

We need, for the Medical Service of two Field Armies, thirty-four thousand Medical Reserves. We hope to get these, not only from the R.O.T.C. units, but by bringing into the Reserve the other young medical graduates. It is in turning the minds of these young men toward their military obligations that the leaders of the profession to whom they look up can, both by precept and example, perform a great patriotic service. This duty to serve in the Reserve, and to assist it with your influence is your most important obligation, but it is not the sum total of it. In modern war the obligation of service and the capacity for it does not cease with the military age. Much valuable service was done in the World War by our medical genro. A man is never too old to be a patriot and to do patriotic service of some sort.—MAJOR GENERAL MERRITTE W. IRELAND, Surgeon General of the Army in Mil. Surg., Mar., 1931.

The Structure and Functions of the Nervous System*

(The Brain, Brain-Stem and Cranial Nerves)

By GEORGE B. LAKE, M.D., Chicago

THE anatomic feature which particularly differentiates man from the lower animals is the extensive and elaborate development of that expansion of the upper end of the central nervous system which we call the brain. Not only is this organ of proportionately greater size and weight than in other animals, but also its complexity is markedly increased.

The brains of the simpler types of animal life, such as fish and birds, show a relatively smooth surface, but as we advance up the evolutionary scale we find an increase in the cellular elements (gray matter) which lie on the outside and, in order to accommodate these, the surface is thrown into folds or convolutions, which become more and more numerous and intricate, reaching their most highly elaborated condition in man. It is even said that there is a distinct difference between the convolutions of the brain of a savage and that of an intellectual civilized man.

Professor T. Wingate Todd, of Cleveland, has shown that the size of the brain differs, in the various social strata in this country, from 1410 to 1420 cc., in members of the less intelligent classes, to 1425 to 1450 cc. in more intellectual persons. This difference of an ounce or two may seem, to some, too small to be of great consequence, but observations have shown that such an impression is erroneous.

The brain, brain-stem and cranial nerves lie, for the most part, within the cavity of the skull, the only exceptions being that the cranial nerves pass out to supply the various sense organs and the structures of the head (the tenth, also known as the vagus or pneumogastric nerve, passing down to the heart and lungs), and that the lower part of the brain-stem is inclosed in the upper part of the spinal canal.

THE CRANIAL NERVES

The cranial nerves, twelve in number, arise directly from the brain (as distinguished from the spinal nerves, which are given off from the spinal cord), and none of them except the tenth leaves the head.

A number of these nerves have highly specialized functions. The first is the olfactory nerve, or nerve of smell; the second is the optic, transmitting sensations of sight; the third, fourth and sixth nerves control the movements of the eyeballs; the fifth is the great nerve of sensation for the face, and is the one involved in trifacial neuralgia or *tic douloureux*; the seventh regulates the motions of the muscles of the face, thus controlling facial expression; the eighth is the auditory nerve, or nerve of hearing; the ninth nerve carries sensations of taste and controls the muscles of the back of the tongue and throat, which are involved in the involuntary part of the act of swallowing; the tenth is the pneumogastric, and will be described in the next lecture; the eleventh, or spinal accessory nerve, loops down and unites with fibers of the upper spinal nerves; while the twelfth controls the movements of the tongue.

One of the most interesting and important of the cranial nerves is the optic, and as it shows particularly well the way in which adaptations are made in order to permit a more accurate adjustment to the environment, some description may not be amiss. It must be understood that the other nerves, also, are equally well adapted to their specific functions.

In some of the lower vertebrates the optic nerves do not cross each other, hence the images of objects presented to sight are distorted, as shown in Fig. 8. In others they do cross, as in Fig. 9, and the advantage is at once apparent, though the curved object still appears straight.

In man there is an intermingling of the optic fibers from the two eyes, known as

*This is the third of a series of four elementary articles on the nervous system, the first two of which appeared in *Clin. Men. AND Surg.* for October, 1930, and February, 1931. The concluding paper will follow, as space permits.

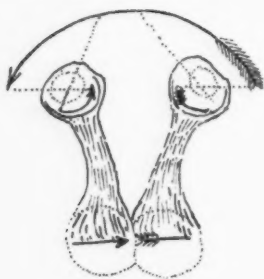


Fig. 8.

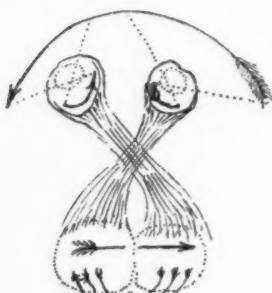


Fig. 9.

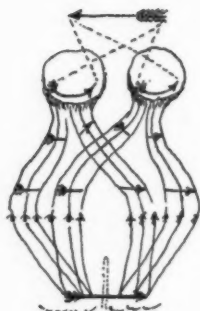


Fig. 10.

Fig. 8.—Diagram Showing Distortion of the Mental Image of an Object, in Lower Vertebrates Without an Optic Chiasm.

Fig. 9.—Diagram Showing the Usefulness of Crossing of the Optic Nerves.

Fig. 10.—Diagram of the Optic Chiasm and the Central Visual Projection in Man.

the optic chiasm, and the vast improvement in the accuracy of visual perception is readily seen in Fig. 10.

The crossing over of nerve fibers from one side of the body to the other, which has been mentioned before and which takes place chiefly in the brain-stem, is believed to be an adaptation for the better employment of the human visual mechanism.

THE MEDULLA OBLONGATA

The brain-stem is often spoken of as the medulla oblongata, though it includes also, the *pons varolii* (generally abbreviated to simply "pons"), and contains some of the most important structures in the body; namely, those which control and regulate the so-called vegetative functions of heart action, breathing, etc., by means of which the life processes are carried on without our conscious attention. (See A, Fig. 11.)

The gray matter of the medulla, which is placed inside, as in the spinal cord, contains both motor and sensory cells, and also cells which are coordinating and relay stations for sensations which come in from the various body structures. Its motor functions include the control of all of the muscles of the digestive tube, from the soft palate to the colon—esophagus, stomach, intestines; the muscles of the trachea or windpipe and the bronchial tubes; and the muscles of the heart. The sensory cells receive and coordinate sensations from the same structures, and also from the gall-bladder and bile ducts and from the membrane which surrounds the heart (the pericardium).

Many of the reflex actions which make up a considerable part of our activities, such as coughing, swallowing, vomiting, sneezing, sucking and the flow of saliva are controlled by the medulla, as well as more complicated ones like ordinary and forced breathing, snoring, yawning, hiccupping, laughing, etc.

One example of the complex operations of the medulla is afforded in the automatic processes connected with speech, which include: (1) Increase in the tension of the air in the lungs; (2) narrowing of the glottis and tightening of the vocal cords; and (3) changes in position and tension of the throat, mouth, soft palate, tongue, jaws and lips. Many muscles are involved in this process, and their actions must be accurately coordinated. There is, in all probability, a center for phonation in the medulla.

It is because of the essential functions of the medulla in carrying on the life processes of the organism that injuries to the upper part of the neck and the base of the skull are, as a rule, so promptly fatal.

THE PONS

The pons (B, Fig. 11) is a structure not found even in the lower vertebrates, but is confined to the mammals and reaches its greatest development in man, showing that it is a comparatively recent development for the specializing of more complicated functions. It lies on the base of the brain, stretching across from one half of the cerebellum to the other (the name means "bridge") and covering the upper end of the medulla.

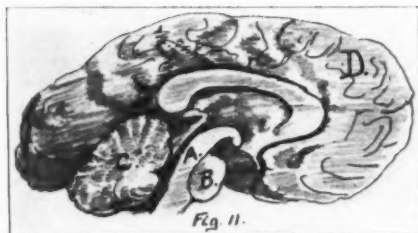


Fig. 11.—Relations of the Brain and Brain-Stem.

The great bulk of the pons is made up of nerve fibers connecting the cerebrum, or higher brain centers, with the cerebellum which, as explained in the preceding paper, is the organ of coordination, and also connecting the halves of the cerebellum with each other. The mass of fibers running from the cerebrum to the cerebellum, through the pons, is considerably greater than that of the fibers which pass from the higher brain down the spinal cord. The development of the pons is an index of the increasing need for accurately coordinated muscular activities as we ascend in the scale of animal life.

The pons contains also some gray matter, the cells of which govern several very interesting reflexes, among them the closure of the eyelids and the secretion of tears when anything touches the eye-ball; winking when a sudden sound is heard; the involuntary turning of the eyes in the direction of any unexpected noise; and several others. It is also concerned, more or less, with breathing, speaking, swallowing, the secretion of various glands about the head, and the movements of the eyes.

It will readily be seen that, so far as the human being is merely an animal, the brain-stem is the most important part of his nervous equipment.

The brain itself is roughly spherical in shape and consists of two entirely distinct parts, the *cerebrum* and the *cerebellum*, each of which is divided into two symmetrical halves or hemispheres, connected by bridges of nerve fibers. In appearance it differs from the brain stem and spinal cord in having its gray matter on the outside, where there is room to expand.

Covering the brain and giving it support, protection and nourishment are three membranes; the *dura*, the *pia* and the *arachnoid*. The *dura* is a firm, heavy structure, lying next to the skull and serving to hold together the gelatinous brain

substance; the *pia* is a thin, gauzy membrane, dipping down into the crevices between the convolutions and carrying blood vessels; the *arachnoid* is a loose, lacy structure, like spider webs (from which the name is derived), in the meshes of which is the cerebrospinal fluid, which serves as a water cushion to protect the brain from shocks. These membranes pass down and cover the spinal cord.

THE CEREBELLUM

The cerebellum (C, Fig. 11) lies at the extreme back and lower portion of the cavity of the skull and makes up about one-tenth of the weight of the brain. It is separated from the cerebrum by a heavy, membranous partition, the *tentorium cerebelli*.

The functions of this part of the brain appear to be purely motor, and their chief purpose is the coordination of muscular movements. A type of nerve cells not found elsewhere in the nervous system is encountered here. Dr. S. Weir Mitchell stated his belief that the cerebellum is the source of energy and muscular strength. The cerebellum is present in all animals who may actually be said to have a brain, and in the higher types, especially the apes, it is large and well developed. All animals need more or less correlation of movement, and the more intelligent species (if that word is admissible) require this faculty in a considerable degree; hence the cerebellar development.

Unlike the cerebrum, fibers from which cross over in the brain-stem, the two halves of the cerebellum govern the *corresponding* halves of the body.

Injury or disease of the cerebellum causes loss of coordinated control of the muscles supplied by the part affected, which can now be localized almost as accurately as in cerebral involvement. Muscle sense seems to be largely lost, so that the patient can make no accurate estimate of the amount of movement or effort necessary to perform any particular act, and usually overdoes it, as, for example, in trying to lift an object from a table, he will raise his hand high above the object, approach it with hesitating and tremulous movements, and finally bring his hand in contact with it so violently as to knock it off the table.

Locomotion, eye movements and all activities requiring highly coordinated move-

ments are especially interfered with. Among these latter, speech is illustrative. The cerebellar patient speaks in a characteristic way: either very slowly, pronouncing syllables separately in a monotonous voice and moving the jaws, lips and tongue much more than is necessary; very rapidly and stutteringly, so that the syllables are jumbled together; or explosively, using far more force than is required. Frequently these types of speech defects are intermingled.

Sensation of all types is not affected by cerebellar disease, nor are the mental faculties impaired. Even the *power* of motion is little diminished. Only the *direction* and *control* of motion are disturbed.

THE CEREBRUM

The endbrain, or cerebrum (D, Fig. 11) makes up, in man and the anthropoid apes, about 70 percent of the entire volume of the nervous system, but it is only in the mammals that anything approaching this relative size is reached. In the fishes and reptiles, the cerebrum is decidedly smaller than the brain-stem. Even in the lower mammals, as the rabbit and kangaroo, it is not much larger than the brain-stem and cerebellum combined.

As the cerebrum has increased in size, new capacities for experience have been added, which have markedly altered behavior or the action-pattern by which nervous energy manifests itself externally. Lower forms of animal life behave in a rigid manner and have little power of adaptation to their environment. As we go up the scale, adaptability increases. Experience represents the totality of the sensory impressions received and correlated in the brain; behavior is the outward expression of this total.

The cerebrum is divided, lengthwise, into two almost (but not quite) exactly similar hemispheres, and each of these is divided, as to function, into a posterior area, devoted to the reception, recognition and correlation of sensory impressions; a middle area, where voluntary motions originate; and a forward area, which is assumed to be the physical seat of the processes of thought.

In the areas devoted to sensation and motion, the exact spots where certain sensations are received and certain motions originated have been so definitely mapped out that an experienced neurologist, confronted with a patient showing motor or

sensory paralysis in any given part of the body, can readily determine what part of the brain or spinal cord has suffered injury or become diseased. But the frontal or "thought" areas give rise to no direct physical signs, and hence are called the "silent areas." Their microscopic structure is well known; but about their functions we know next to nothing.

One case was carefully studied a number of years ago, of a man who, by an injury, suffered the complete destruction of the left frontal lobe of his brain. The patient's character and behavior changed markedly. His reason and judgment were impaired; he became irritable, unreliable and quarrelsome; from a steady worker he changed into a wanderer; and from a conscientious person of good habits, into a profane, dishonest and antisocial wastrel.

Not only are the various sensory areas capable of remarkable development, each in its own line, but all are connected together by an intricate network of communicating fibers; and there seems to be a central "mixing area," where all sensations received through touch, taste, smell, sight and hearing can be mingled together into the general feeling of *self consciousness*, which distinguishes man from the other vertebrate animals.

The various sensory, motor and intellectual areas are roughly mapped out on the external and internal aspects of the brain in Figs. 12 and 13, and in each of these general areas, specific functions have definite locations. For example, the centers for motion are located along both sides of the *fissure of Rolando* (R, Figs. 12 and 13), those for the head and face being low down, on the outside, near the fissure of *Sylvius* (S, Figs. 12 and 13), and as one goes up on the outer surface of the brain, the parts supplied go down the body, until the centers for the feet and toes pass over the top to the inner surface of the hemispheres.

It must always be remembered that the sensory and motor centers for those parts of the body below the neck are located on the *opposite* side of the cerebrum, because of the crossing of the fibers in the spinal cord and brain-stem.

Just in front of the motor area is what is known as the *psychomotor area*. This is generally believed to be the center for the voluntary performance of skilled and complicated actions—the storehouse of abil-

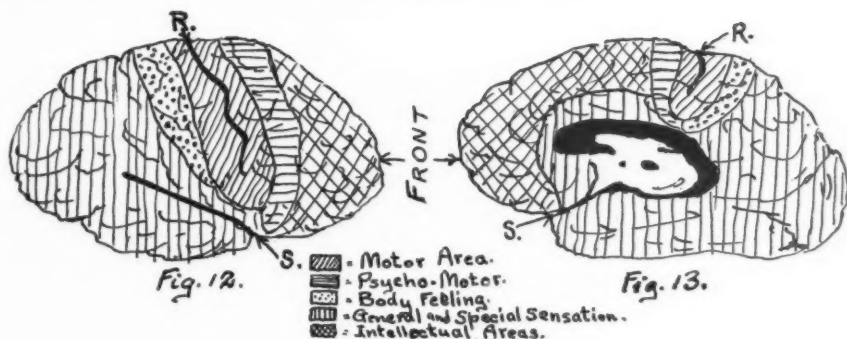


Fig. 12.—Topography of the Cortical Areas—External Surface.
Fig. 13.—Topography of the Cortical Areas—Internal Surface.

ities acquired by long practice. In order to start these centers into action there must be an incentive, generally arising from a complex intermingling of psychic and sensory stimuli; a clear perception of the purpose of the act to be performed; and an adequately detailed conception of the parts which must be moved in order to complete the act. If any one of these three fails, the act will not be performed or will be done incompletely or imperfectly.

An illustration of the working of the psychomotor areas is found in connection with the power of speech. A point on the brain, near the fissures of Sylvius and Rolando, is known as Broca's area or the speech center. When injury or disease occurs in this region, the patient is unable to pronounce words. He may understand perfectly, know just what he wants to say, and be able to read and write, but he cannot speak intelligibly. This is known as *motor aphasia*.

Variations of this phenomenon are found in *sensory aphasia*, where the patient cannot understand spoken words; *alexia*, where he is unable to read; and *agraphia*, where he has lost the power to coordinate the muscles of his hand and arm for writing.

It is interesting to note that these centers are located on but one side of the brain—the left side, in right-handed persons, and vice versa. This arrangement offers hope for the recovery of the aphasic, because, by training the centers on the other side of the brain, as they were originally trained in the first place, the lost function can be restored. The patient must again learn to read, write or speak, just as he did when a child; but the learning will be much more rapid, for the reason that he has the bene-

fit of his enlarged intellectual powers and habits of study, these being in no way impaired by the lesion causing the aphasia.

In all our thinking about the functions of the brain we must remember that we have to consider *quality* as well as *quantity*. Attention has been called to the fact that the difference in size between the brain of a ditch-digger and that of a philosopher is not more than two or three ounces, but the difference in the quality of the two brains is almost immeasurable.

The new-born infant has almost as many brain cells (some say quite as many) as has an adult. Most of these cells have not, however, been roused into activity—they lie dormant. As experiences multiply and habits are formed, more and more cells begin to function and more and more connecting paths are opened up. The quiescent brain is practically as large as an active organ, but it is infinitely less useful, to its possessor and to the world. Many persons go through an entire lifetime with only a fraction of their brain cells and connecting fibers in full activity. They, therefore, fail to utilize their largest opportunities or arrive at their worthiest goals.

The practical value of a study like this is achieved only if we come to a full realization of the possibilities, in the way of education and progress, which are inherent in the immensely complicated structure of the central nervous system, and consciously and deliberately set about the development of the latent powers and capabilities which all of us possess, to a greater or less extent.

It will be readily understood that the tremendous subject of the structure and functions of the brain can be no more than

hinted at in one brief discussion, but it is hoped that some points of value have been brought out, and some lines of thought and study opened.

The Nutritive Value of the Processed Milks*

By JAMES A. TOBEY, M.S., Dr. P.H., *New York City*

AMONG the few reasons why pure milk must properly be called "the most nearly perfect food", and not the perfect food, are its bulk, due to a normal water content averaging about 87 percent, and its natural tendency to sour rather quickly under ordinary conditions.

In order to overcome these slight disadvantages, of minor significance compared with the unsurpassed nutritive qualities of milk, man has sought for centuries to perfect processes whereby all or some of the water could be removed from milk without undue injury to the valuable solids remaining. A further object in the concentration of milk has been the improvement of its keeping ability, with consequent enhancement of its economic importance. Still another aspect of such processing, of particular significance in connection with the progress of sanitary science, is the safety factor. Modern public health rightfully demands milk which is both clean and safe. Sanitary production assures this first essential, and a proper heat treatment guarantees the second.

HISTORY AND DEVELOPMENT

Although milk and other foods were undoubtedly dried in ancient times, the first historical allusion to such a product occurs in the writings of Marco Polo, most celebrated of world travelers, who described the dried milk of the Mongols of the thirteenth century. Not until 1810, however, was a manufacturing process devised for this purpose. In that year, Nicholas Appert, the inventor of canning, developed a milk tablet, and a few years later, in 1835, Newton patented a method for condensing milk. In 1855 a patent for a dried milk was issued to Grimwade, in England, but the manufacture of concentrated milks of

this type languished until after the beginning of the twentieth century, when the Just-Hatmaker (1902) and the Merrell-Gere (1906) processes were introduced and established as satisfactory methods.

An American, Gail Borden, was the inventor of the first commercially successful process for concentrating milk. A patent for his scheme was granted in 1856 and, after the Civil War, when the federal government commandeered the output of his factories, condensed milk, preserved by the addition of sugar, was widely used. Evaporated milk, concentrated without the added sugar, was first manufactured in 1885, and malted milk, a dried processed blend of barley malt, whole wheat and milk, appeared on the market in 1887.

The heating of whole milk before its consumption by human beings was advocated by Jacobi in 1873, and sterilized milk for infant feeding was recommended by the German, Soxhlet, in 1886, and distributed for many years thereafter. Pasteurization of milk as a commercial measure began in Denmark in 1890 and was introduced in the United States two or three years later, chiefly through the interest of the philanthropist, Nathan Straus. Pasteurization of market milk made slow progress in our country until 1907, when a leading milk concern in New York City put into operation the holding system of pasteurization. Since that date this process has been widely adopted throughout our dairy industry.

PRESENT EXTENT OF USE

Reliable estimates place the quantity of pasteurized milk now distributed in the United States at from 35 to 50 percent of the total milk supply. In addition, some 4 percent of the nearly thirteen and a half billion gallons of milk produced annually in this country goes into the manufacture

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of the concentrated milks, including the condensed, evaporated, dried and malted milks.

Since approximately half of our population is now regularly supplied with milk which has been processed by heat, and since nearly every family probably uses canned milks, either habitually or occasionally, the nutritive values of all of these processed milks are of considerable significance to this huge consuming public, as well as to general public health. The White House Conference on Child Health and Protection has recognized the importance of this problem and has included in its comprehensive report on the nutritive aspects of milk, prepared by a sub-committee of the committee on milk production and control, an extensive section on the nutritive properties of the processed milks. The magnitude of the studies on this subject is indicated by the fact that some 500 references to its various phases have been assembled from the scientific literature.

NUTRITIONAL ASPECTS

A processed milk cannot, of course, be any better than the milk from which it is made. Although pure milk is conceded to be an indispensable article in the normal human dietary, and is recognized as the one food for which there is no single substitute, the nutritional qualities of milk may be increased by attention to such factors as the care and feeding of cattle and the sanitary production and proper handling of milk. Whether the processing methods exert any deleterious effect on the nutritional values of milk is a question which can be answered by discussing succinctly each of the processes and by summarizing the scientific work done on this problem.

Pasteurized milk: Milk may be pasteurized by several methods, though the primary object of each is to destroy any pathogenic or other dangerous bacteria which might be present in the raw milk. In the holding method, which is in most general use for market milk, raw fluid milk is rapidly heated to a temperature of from 143° to 145° Fahrenheit and held at that temperature for not less than thirty minutes. It is then promptly cooled. In so-called flash pasteurization, which may employ either steam or electrical methods, the raw milk is heated to a much higher temperature (usually 160°F. or more), for a shorter time. This process is used in industry and, to a limited extent, for market milk.

The proper pasteurization of milk does not cause any appreciable change in its chemical or physical properties. The taste of the milk, and the characteristics of the natural fats, proteins, carbohydrates, minerals and enzymes are essentially unaltered.

Of the vitamins contained in milk, only one is at all seriously modified by pasteurization. Vitamins A, D, E and G are relatively unaffected by the process, but there is a partial destruction of vitamin C, the antiscorbutic, and a slight diminution of vitamin B₁, the antineuritic factor of the vitamin B complex.

Condensed Milk: In the manufacture of condensed milk, standardized whole milk is forewarmed at a temperature of about 206°F. Granulated sugar is then added so that there will be about 42 percent in the finished product, and the mixture is condensed in a huge copper vacuum pan, at a temperature of about 145°F., until two and a half parts of the milk have been reduced, by the evaporation of water, to one part of condensed milk. The product is then cooled and canned by machinery.

In condensed milk the curd is broken up so that it combines more readily with human gastric juice than does the curd of ordinary whole milk. Other physical and chemical properties of the milk are not appreciably affected by the condensing processes, except, of course, that condensed milk has a characteristic cooked, sweet taste and, because of the concentration, is more viscid than fluid milk. Condensed milk is very low in bacteria, but not sterile.

With respect to the vitamins, A, B, D, E, and G are relatively unimpaired. There is some destruction of vitamin C, but apparently slightly less than in the case of pasteurized milk. Because of the vacuum in which the heating is conducted, this vitamin is protected from the unfavorable effect of oxidation.

Evaporated milk: Evaporated milk is whole milk to which nothing has been added and from which approximately 60 percent of the normal water has been removed by heat. The milk is first preheated for a few minutes, at a temperature of from 200° to 212°F., and then is condensed in a copper vacuum pan, at a temperature of from 120° to 135°F. It is next homogenized by forcing through fine nozzles under high pressure, then cooled and canned. Immediately after canning, the milk is sterilized in the can, a temperature of from 234°

to 245°F. being employed, for 20 to 30 minutes.

As in the case of condensed milk, the fat particles of evaporated milk are finely dispersed, so that the curd is much more digestible than that of ordinary whole milk. Otherwise the physical and chemical properties are not significantly affected, although it has been claimed that some deposition of calcium salts may occur, without, however, reducing the capacity for the assimilation of this salt in the human digestive system. Evaporated milk has a characteristic taste and a greater viscosity than has whole milk. It is the only milk product that is sterile and, possibly except for a few practically insignificant thermophiles, free from bacteria and molds.

Vitamins A, D, E and G are not appreciably affected when milk is evaporated. There is evidence of a slight loss in the antineuritic vitamin B, and it is generally agreed that vitamin C is completely destroyed.

Dried milk: The dried milks and milk powders are products from which practically all of the normal water is removed by heat. They are manufactured either by the spray or roller processes. In the former, which is the more widely employed, pasteurized and precondensed milk is sprayed under pressure into a huge chamber lined with tin, where the stream of milk is mixed with a current of hot, filtered air, thus maintaining a temperature of about 180°F. in the dry box. The moisture is carried off from the milk and the solids fall like snow to the bottom of the chamber, from which the powder is removed hourly.

In the roller process, cold whole milk is poured into the trough between two contiguous steel rollers, revolving in opposite directions and heated by steam. The water evaporates, leaving a film of milk powder, which is scraped off as the drum finishes its revolution.

The fats of milks dried by each of these processes are broken up, though not quite so completely as in the case of condensed and evaporated milks. So far as is known, there are no other significant changes in the chemical and physical properties when milk is dried. These products are uniformly low in bacteria and while not sterile, are free from pathogens.

From the biologic standpoint, vitamins A, B, D, E and G are relatively unaffected by

the drying processes. Vitamin C is reduced in the course of the spray process to about the same extent as in pasteurized milk. In the roller process it is somewhat reduced, but less than in the spray method, probably resembling condensed milk in its potency in this vitamin.

Malted milk: Malted milk is a processed blend of barley malt, wheat flour and milk, which has been concentrated in a vacuum pan at 125°F., and then dried in another vacuum pan or on rollers. The product may be plain or chocolate flavored. Malted milk should not be confused with mixtures of dry malt and dry milk.

The few studies on the bacteriology and biologic properties of malted milk indicate that the product is low in bacteria and supplied with vitamins A, B and G, in proportion to the milk it contains. It is probable that vitamin C is partially destroyed in the process. Malted milk is, of course, a rich carbohydrate food, easily digestible and especially useful in convalescent and invalid diets and as a general beverage, either with or without milk.

SUMMARY AND COMMENT

Since the beginning of the present century, there has been a phenomenal growth in the manufacture, distribution and use of the various processed milks, including the pasteurized, condensed, evaporated, dried and malted milks. The future will undoubtedly see an even greater public appreciation of these products, so that eventually all, or nearly all, of the milk supply will be obtained only from properly processed milks. Safety, from the standpoint of public health; convenience, uniformity, stability and concentration, from the standpoint of economics; together with no significant diminution in the nutritive properties, are qualities which will stimulate the use of these important forms of milk.

Pasteurized milk is now estimated to comprise from 35 to 50 percent of our market milk supplies. The quantity is increasing and should grow. The concentrated milks now comprise about 4 percent of our total milk supply and are also justifiably increasing in popular favor.

In the processing of milk, as now generally carried out, there are no significant alterations in the chemical and physical properties of whole milk. For all practical purposes, pasteurized milk is the same as ordinary raw, whole milk of high quality.

Such slight changes as are brought about in the concentrated milks are, in general, advantageous. Thus, these milks are more digestible and more easily assimilated than ordinary whole milk.

From the standpoint of the vitamin content, the situation may be summarized by the assertion that the important vitamins (A, D, E and G) of whole milk are relatively unaffected by any of the processes. In some instances there may be a slight diminution in vitamin B (B₁). In all cases there is some destruction of vitamin C, ranging from the slight reduction in condensed milk to the complete loss of this vitamin in the evaporated product. This loss is not of much practical significance in human nutrition, as the antiscorbutic vitamin is readily obtainable in numerous other common foods, such as the citrus fruits and certain vegetables.

The processed milks to which nothing has been added, such as the pasteurized, and the dried and evaporated, when properly relieved, may, therefore, be em-

ploied with entire confidence for all of the same purposes to which pure whole milk is put. Condensed and malted milks may likewise be used as safe substitutes for milk, bearing in mind the carbohydrate values and other special characteristics of these products.

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 350 Madison Ave.

Cisternal Puncture in Syphilis*

By G. CIRINCIONE, M.D., New York City

SINCE Dr. Alois Memmesheimer visited the Bellevue Medical College, in 1928, reports on suboccipital punctures have been rather frequent. In New York, credit must be given to Dr. H. C. Saunders for reporting a large number of cases (2019, up to July, 1929). Many more have since been performed at the Bellevue Medical College. It is not fair to mention cisternal puncture without acknowledging the untiring efforts and kindness shown by Dr. Saunders in training the members of his staff and postgraduate students. I was among the first and feel bound by gratitude to him.

Having had the opportunity of witnessing a large number of punctures, and having carefully noted all the after-effects, I am firmly convinced that cisternal puncture has a definite place in syphilology, though I certainly do not intend to say that it should supplant lumbar puncture in every case.

Aside from those cases in which cisternal puncture has a definite contraindication, due to increased intracranial pressure and in patients who suffer, for example, with tuberculous or cerebrospinal meningitis, there still remains a great field which, at the present time, is represented by the syphilitic patient.

It is well to keep in mind that, on the cadaver, experimentally, india ink, injected into the cisterna, stained the entire cerebrospinal cortex; while only the membranes as high as the thoracic region were colored when the lumbar route was used; also the conclusive experiment of Ayer, that 1 cc. of serum, introduced by lumbar puncture, does not reach the cisterna magna during the period of injection. This shows, to my mind, the superiority of cisternal medication in cerebrospinal involvement.

The scope of this paper is to impress upon the general practitioner the necessity for performing a spinal fluid test on syphilitic patients and the simplicity of using the suboccipital route. The old criteria of dis-

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charging a patient as "cured," depending upon a series of negative Wassermann blood tests, cannot now be accepted. An increase in the number of cells and changes in the protein and globulin content in the spinal fluid, call for more energetic and prolonged treatment, even if the Wassermann and colloidal gold tests are negative.

Doctors treating syphilis admit the difficulty of persuading a patient to undergo a lumbar puncture. The necessity for hospitalization, at least for one night, and the expense accompanying it are reasons keeping the patient from this indispensable test. If we also take into consideration the quite regular after-effects of a lumbar puncture, consisting of headache, backache, often incapacitating the patient for a full week (effects due to seepage, according to Stokes), we will easily understand why the patient refuses to submit to lumbar puncture, if not at first, surely at the second request. None of these sequelae follow cisternal puncture and all my patients have been able to return to work soon after. Some of the slight sequelae mentioned in Dr. Spiegel's paper are due, as he states, to the fact that the technic was not very well advanced, while those recorded by Dr. Saunders must be interpreted as technical errors, unavoidable when training new pupils.

As to the "electric shock" that lasts only a fraction of a second, recorded occasionally by others, when piercing the dura, I had two such occurrences during my early punctures. Careful questioning of the patient soon after the "electric shock" failed to reveal any consciousness of the contraction. While the shock coincides with the piercing of the dura, and evidently is due to the contact of the needle with some nerve fibers or roots, I am inclined to consider it as a technical error.

I have performed many punctures, half of them in my office. The amount of information gained, in regard to the serologic condition of the patient's spinal fluid, has been checked up, thanks to the willingness of the patient to submit to repeated tests. The improvement, if any, has been followed more accurately, and the treatment adjusted accordingly.

Of over 400 punctures, I will mention only two, for the conclusion they helped me reach. On one, a female, age 57, I succeeded in drawing fluid through the suboccipital route, after two attempts by

the lumbar route had failed. The patient, a sufferer from neurosyphilis, was affected with spinal arthritis. The other patient, a man 68 years, had had three previous unsuccessful attempts at lumbar puncture, in a reliable institution; the operator was unable to enter the vertebral spaces, on account of arthritis. A cisternal puncture furnished enough fluid for the test which, incidentally, was positive.

The indications for cisternal puncture are identical with those for lumbar puncture, except in cases for anesthesia of the lower cord. It is also used in conjunction with lumbar puncture:

- 1.—In suppurative meningitis, for the purpose of spinal irrigation.
- 2.—In epidemic meningitis, for the administration of antimeningococcic serum.
- 3.—In the diagnosis of spinal block.

TECHNIC

The method employed is that of Eskuchen, which offers a margin of safety because, in this technic, use is made of a deep point of orientation.

Preliminary procedure: Request the patient to lie down on his right side, with his back toward the operator. Support his head with a wood block or a sand bag, taking care that the center of the occipital protuberance and the spinous processes of the vertebrae are on the same plane. Flex the patient's head toward the sternum and see that it does not tilt either way. Cross the arms on his chest, flex his legs and direct him to relax. Proper position is almost as important as are antiseptic measures.

Disinfect the suboccipital region with tincture of iodine and alcohol. From a sterile container, an assistant will drop the needle into your hands. Always try the stylet. The needle should be held with the first and second fingers below the guard and the thumb on the hilt.

The Puncture: Now, with the index finger of the left hand, feel the occipital protuberance and press down along the median line until the finger rests squarely on the spinous process of the second cervical vertebra. Rapidly insert the needle 0.5 centimeter above the finger, pointing upward and forward to a point 0.5 to 1 centimeter above the glabella. If the direction is correct, the needle will touch the occiput just posterior to the edge of the foramen magnum.

Withdraw the stylet and change the direction of the needle, following the curve of the squamous portion of the occiput until the resistance of the occipito-atlantal ligament is encountered. From this point to the dura, the distance ranges from 0.5 to 1 cm. The fluid escaping from the needle shows that the cistern has been entered. Collect the amount of fluid needed. Withdraw the needle quickly, pressing with the other hand on the occiput. Have the patient sit up while a pledget of gauze is firmly pressed on the site of the puncture for a few minutes.

The advantages of cisternal puncture, as tabulated by Dr. Saunders:

- 1.—It is safer than lumbar puncture.
- 2.—It is more easily performed.
- 3.—It is less painful.
- 4.—It is not followed by meningismus.
- 5.—Headaches are mild, of short duration, easily controlled and seldom occur.

6.—Hospitalization is unnecessary.

7.—When several punctures are required, the cooperation of patient is readily obtained.

CONCLUSIONS

1.—Cisternal puncture, if properly performed, with a clear knowledge of the topographic anatomy of the suboccipital region and a well developed sense of touch, is not dangerous.

2.—In advanced arthritis and malformation of the spine, it is the method of choice.

3.—This method does not interfere with the patient's routine work; does not require hospitalization; and does not incapacitate the patient, even temporarily.

4.—It is, therefore, an ideal method and affords us an opportunity for the early detection of abnormalities in the spinal fluid.

323 East 14th Street.

LABORATORY AND CLINICAL DIAGNOSIS

Not all instruments of precision are as precise as they are sometimes thought to be. Many laboratory tests are not infallible—they are only approximately accurate. The electrocardiograph has a strange way of misbehaving at times; x-ray films taken by different operators, or even by the same operator with slightly varying technic, give pictures so different as to make interpretation difficult; different laboratories do not always agree as to the Wassermann test on the same specimen of blood. So, when reports come to us as to findings, especially if the reports are interpreted by technicians in terms of clinical pathology and disease, we must be on our guard against accepting as a final decision what should really be viewed only as contributory evidence.

An important duty falls to the lot of the physician; that of putting together and interpreting the results of the history, physical examination, laboratory and instrumental findings, and perhaps those of the specialist.

One of the strongest claims for the retention of the older methods of diagnosis is that they keep the physician in close personal touch with the patient. Without that intimate contact, many of the facts revealed by the various processes of diagnosis are not applied properly and their value is lost; without that contact the practice of medicine loses much of its worth, much of its dignity and charm as a helpful, sympathetic profession.—DR. JAMES B. HERRICK, of Chicago, in J. Indiana M.A., Feb. 15, 1931.

PHYSICAL · THERAPY AND RADIOLOGY

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GENERAL ASPECTS OF CANCER

IN THE December, 1930, issue of CLINICAL MEDICINE AND SURGERY we discussed the distribution of cancer in the two sexes and according to anatomic systems, and the statement was made that cancer never starts in healthy tissues or organs. The importance of chronic inflammatory tumefactions as the starting point of nodes of epithelial cells was stressed and a brief resumé given for the correct medical management of such lesions, to exclude or include cancer.

Some of the general aspects of cancer will now be considered, referring especially to the observations made by men prominent in the study of that disease.

Progress in the control of cancer has been made solely by clinical cancer research, comprising early diagnosis, more varied treatment with surgery and radiation and careful follow-up, to determine the efficacy of diagnosis and treatment. Cauterization with the cautery iron, the electrically-heated cautery and the "radio-knife" are surgical procedures and therefore are assigned to the domain of surgery and are not especially enumerated.

There is no known specific cause for

cancer, but there is a suggestive etiology; namely, chronic irritation and chronic inflammation. Ewing states that the possibility of discovering the formal genesis of cancer—that is, some general property of the cancer process, which may put us in control of these diseases—may justify the widespread interest in this ambitious project. Science is laying a very broad foundation in cancer research, upon much of which no superstructure may ever be erected. On the other side, the more tedious study of the causal genesis—that is, the exciting and predisposing factors and the clinical conditions under which cancer arises, and extending over a wide field—makes continuous progress and has brought results of great theoretic and practical value. This knowledge of etiology, together with the natural history of the disease, public education and more varied and skilful treatment, have steadily advanced the means of cancer control.

Cancer is a disease of cells, which have lost effective inhibition or restraint of growth gradients. Chronic irritation or inflammation causes a tumor *anlage*—the determination factor. The subsequent fate

of the *anlage*, composed, of course, of cells, is dependent on the relation of these cells to the entire organism. A tumor develops through the addition or subtraction of an antagonistic action of the organism—the realization factor.

According to Woglom, natural resistance to a tumor is the ability of the host to react so promptly that a growth cannot gain a foothold. Resistance must be effective before a tumor is established. Nothing may be hoped for, at present, in respect to a successful therapy to activate the defensive powers of the host after a tumor has become established. This would refer particularly to the uselessness of treatment with colloidal solutions of heavy metals, and serums and toxins prepared from bacteria supposedly causing cancer.

If restraint of division of cells can be obtained by agents which restrain cell division, without complete destruction of cell formation, or permit the cell to mature from the embryonic or undifferentiated state to that of differentiation, with growth restraint, then the hope of control of this disease shines brightly. Restraint of cell division and growth can be attained only negatively; that is by surgical and radiologic eradication. Canti, in his films, has shown that the action of radium rays on cancer is twofold: growth restraint and cell destruction. Phagocytosis by macrophages removes the cell debris.

The histologic diagnosis of tumors requires long experience in general histopathology and in special tumor pathology. The diagnosis must include: (1) a histogenetic diagnosis, the grade of histologic malignancy and the degree of radiosensitivity; (2) aid in making a clinical diagnosis and probable prognosis; and (3) assist in selecting the indicated method of treatment.

Many of the most important facts about tumors can be learned only by the earnest cooperation of the surgeon, the radiologist and the pathologist. The microscope determines the finer structures of the tumor and permits a classification of the neoplasm.

A certain behavior of a growth may be predicted from a certain type of structure. The pathologist should study the special characteristics of the cells, the structure, the cytoplasm, the nuclei and the stroma. Grading according to Broders, or numerical evaluation according to Hueper, enables the pathologist to determine a histologic malignancy-index, which aids in the prognosis and determines the radio-sensitivity of the tumor.

Confirmation or refutation of the pathologist's diagnosis and prognosis can be obtained only from the study of the clinical course of the disease. The pathologist sees only the tissue; the surgeon and the radiologist observe and follow up the patient and thus know the end-result. The clinician's most important contribution to medical science will be the publication of final results in relation to diagnosis, prognosis and treatment.

In carcinomas treated by surgery or radiation therapy, the questions to be studied are: (1) Did a recurrence of the growth ensue? (2) Was the recurrence due (a) to the nature of the growth; (b) to the inadequacy of the operation or radiation; or (c) to the dissemination of the cancer disease, either local or systemic?

A recurrence of a tumor may be local or regional: local, if at the site of the primary invasion; regional, if it occurs in the adjacent tissues and organs or in the regional lymphnodes. It is safe to say that, if a tumor be completely removed by surgery, it cannot recur. Recurrences are, therefore, due to incomplete removal—a portion of the original tumor had been left behind. If small rests or rootlets of the tumor are left, it is equivalent to leaving some of the original growth; if during operation some of the tumor cells are spilled over the wound, recurrences take place from the growth of these grafts; if metastases in the regional lymphnodes or invasion of adjacent tissues and organs had taken place, and these were not removed at the primary operation, the tumor continues to grow. The entire his-

tory of the recurrent growth is, therefore, one of incomplete removal of the tumor-bearing area. Surgery, to be successful in the cure of cancer, must eradicate the entire tumor-bearing region, as, for instance the breast with the pectoralis major and minor muscles and the fat and lymphnodes of the axilla. Leaving the pectoralis muscles behind would stamp the operative procedure an incomplete one.

Since the advent of radiation therapy in the treatment of cancer, clinical, histologic and physical observations had to be made to determine the action of roentgen and radium rays on normal and abnormal tissues, the dispersion of rays in space, the indications and contraindications to radiation treatment. The evaluation of these investigations had to be based on the final end-results of every case. Hence careful follow-up of these cases after treatment is imperative. If radiations are dispersed homogeneously throughout the entire tumor-bearing area and if the applied dose is of such quantity that it will completely destroy the tumor cells, then the growth will not recur. Should the radiosensitivity of the tumor cells be of a low degree, or a homogeneous distribution of the rays throughout the tumor area be not attained, or the radiation dose be sublethal, then recurrences will take place, just as incomplete surgical

removal will be followed by a continuation of the growth.

H. S.

BRIEF REPORTS

THE man who has wide experience in or has done extensive study of some particular subject, should embody his results and ideas in a formal article; but the physician who is treating his patients intelligently and observing them closely is also entitled to a hearing, when he has something to say, even though he may not be able to report 500 or 1,000 cases treated by the method he advocates.

We shall be glad to receive, for publication in the *Clinical Miscellany* section of this Department, brief reports of results obtained, by men who are using physical methods in their practice, or suggestions for the care and proper handling of the apparatus involved—anything, in fact, which will tend to make our readers better physical therapists. Technical and clinical questions will also be welcome.

These little articles should be from 500 (or less) to 1,000 words in length and, if convenient (though this is not essential), should be typed, with double spacing, on letter-size paper.

We hope to hear from many.

G. B. L.

SUNSHINE AND RESISTANCE

A large proportion of winter colds and sinus infections could be entirely prevented by regulated exposure of the naked body to sunshine during the summer. The protection might be increased even in winter by more fresh air and less steam heat; by more dining in and less dining out; by more sleep and less bridge. But this would mean irksome restrictions, being different from someone else, even "queer." It is easier to look for a sun-lamp than for sunshine; to spend the summer rushing around Europe than resting and exercising in the sun. But in January the nose specialist exacts the penalty.—DR. L. LANGSTROTH, in *Survey Graphic*, Jan., 1930.

Technic of Applying Diathermy

By WILLIAM A. LURIE, M.D., New Orleans, La.

REFERRING to changes in medical practice, Sir William Osler said, "The new school does not feel itself under obligation to give any medicine whatever, while a generation ago, not only could few physicians have held their practice unless they did, but few would have thought it safe or scientific. The modern treatment of disease relies very greatly on the old so-called 'natural' methods—diet and exercise, bathing and massage; in other words, giving the natural forces the fullest scope by easy and thorough nutrition, increased flow of blood, removal of obstructions to the excretory systems or the circulation in the tissues."

By means of physical therapy the medical profession of today is proving the truth of the words of Osler. They no longer fear to treat their patients without the use of the time-honored prescription. They recognize the insufficiency of medicine in the great majority of conditions which they are called upon to treat. Also, the limitations of physical measures, diet, exercise and all other means at our command are being better understood.

Many of life's phenomena are explained by cell reactions and their ultimate electric potentiality, and it is evident that, in the practice of medicine of this generation, attention is being directed more particularly to the individual cell function of the various organs, rather than to the specific action of medicines on the organs as an entity. Treatment by heat or diathermy develops an increase in circulation to a predetermined area, and the subsequent elevation of the temperature of the body. Without these effects the treatment should be considered insufficient and a failure, for it is the continued local heat which accomplishes the increase in cell function.

This paper concerns the proper application of the electrodes for the development and maintenance of heat at any given point, so that the treatment may be continued over a sufficient time to produce a beneficial reaction. Failures more often result from insufficient treatment than because of an overtimed one. It is not to be construed that a sufficient treatment is determined by the intensity of heat developed, but rather

by the comfortable continuity of the proper degree of tolerable heat over the necessary period of time. There is an appreciable difference between the results of a well-borne heat treatment which had been given over a sufficient period of time, and a similar treatment with greater heat for a shorter time.

APPLICATION OF ELECTRODES

There are several factors which enter into the application of the electrodes for a proper treatment and in the preparation of the electrodes.

The peculiarities of the electric current are well known. It "flows" over the shortest path between the two poles or electrodes, *provided that the shortest path is of equal or less resistance than any other.* Should one apply two electrodes for the treatment by diathermy to opposite sides of the body, the body mass between these two electrodes offers a potential electrical resistance. It is utilizing this resistance to electric flow which produces heat of therapeutic value. Should there be an avenue around the body surface, of less resistance to the passage of the electric current, even if this path be a longer one, the current will pass over it and none will flow through the tissues. This can be easily demonstrated, by "shorting" the two electrodes with a wire or metal plate of any size or length.

Another peculiarity of the electric current, particularly that of high voltage, must be taken into consideration. The current will "jump" or "spark" off from a high point or "flow off" from a line which is acutely bent, unless very heavily insulated. In the treatment of our patients we are more concerned with the sparking from the electrodes, rather than the jumping of the current from a wire connection. However, should a connection of the conducting wires to the electrode be made at an acute angle, and at the edge of the electrode, or if the connection in such a position is not a secure one, it will be found that at such a point the current will spark onto the patient's skin, when the amount of current used in the treatment is increased. This will cause a burning sensation, pain, and if continued, a blister or burn. Therefore,

in the preparation of the electrodes, one of the first things necessary is the making of a proper connection between the conducting cords and the block-tin electrodes, so as to avoid the possibility of a continuous sparking onto the bare skin surface. One of the disadvantages of the mesh electrode is that the individual segments are apt to be uneven and produce a high point of current leak when the current is advanced to a sufficient amount for a proper treatment.

The sizes and shapes of the electrodes are very important. Only a definite amount of current can be safely used for treatment purposes with each square inch of electrode surface. This does not imply that, should one have a six-by-ten inch electrode for one applicator and a two-by-three inch electrode for the other, the capacity is to be estimated by the 66-square-inch surface. It is judged by the area of the smaller electrode, and still further determined by the actual area of surface contact which is made; also the area of the body over which this contact is being made. (This will be referred to again later.) Having determined the size and the shape electrodes one wants to use, the next step is to either make them or select them, if one has electrodes of many shapes and sizes on hand.

MAKING ELECTRODES

The next question, which perhaps really should have been considered first, is how to make an electrode properly.

The vast majority of electrodes in use today are made of block-tin and are of light-gage material. After deciding on the size of an electrode, a piece is cut a quarter-inch larger than one wishes to use, making it circular or oval and without corners, and leaving a tab end long enough so it can be turned over, well into the body of the electrode, for the connection with the conducting wire. The block-tin is placed on the desk blotting pad, and with a blunt instrument (back of a knife or scissors) a line is traced one-eighth inch inside the edge, entirely around the electrode, except along the tab portion. The edge of the metal is then turned back along this line. If this is done carefully, allowing some flat instrument to follow along the line of folding, a smooth, even and uninked edge will be formed. This folded margin can be still further flattened by pressure with an ordinary rolling-pin. The tab is then turned back onto the same side of the electrode as

that on which the edge has been rolled, and the electrode is ready.

The advantages of an electrode so made are: there is no extra expense incurred in the making of an electrode in this manner; the turned edge, in addition to taking the place of the bevel in thicker materials, leaves no cut, sharp or splintered edge for the leakage of current; the life of the electrode is greatly increased and it is prevented from cracking and breaking; an electrode so made can be ironed out easily, and again becomes a serviceable apparatus.

In the application of any electrode, if it be too stiff, the pressure necessary to assure a good skin contact will often allow the skin to roll or fold over the edges and "pinch". The thin metal electrode is more pliable and therefore makes a better contact, for it becomes easily adapted without skin folds. Such folds of skin over the edge of the electrode do not tolerate the heat well. It will be found that about them there is the greatest heat sensation and discomfort, and the most frequent skin burns. The current dose will have to be reduced to prevent discomfort and accidents, and if the treatment is allowed to continue at this low reading, an ineffectual treatment is given.

Folds of this character are more frequent and most troublesome about the abdomen. There have been many methods tried to obviate them, the best, in my experience, being a binder I have designed, which makes use of air pressure to prevent the skin folds and, at the same time, to secure the electrodes in place without the necessity of the patient remaining still or in one position during the treatment.

On the limbs, and particularly about joints, it is far better to place the electrodes on opposite sides of the member, rather than above and below a joint or a tender point. It has been my experience that, with the application of electrodes at different levels, the maximum of current, and consequently of heat, cannot be given in any case. It is only the approximating edges of the electrodes which become warm and soon too hot. The body of the electrode remains cool. The concentration of heat at the edges may cause a burn.

THE TREATMENT

The next step is the actual application of the electrode and the administration of the treatment. It is several years since I have advocated or practiced soaping electrodes.

If an electrode is applied dry and in good contact, and the current increased gradually to tolerance, a more efficacious treatment can be given, with better results and more safely, than when any lather or other medium is used to improve a poor contact. Dried soap is not a conductor of electricity. Evaporation of the moisture from lather leaves a dry soap coating on the electrode. This causes the same amount of current to be forced through an ever-reducing area of moist contact. This will explain why there are so many cases where a treatment which was begun in comfort ends in a "burn". The obtunding effect of heat is well known, so that a soaped electrode, with its decreasing area of current passage, will cause a burn, because what may have been a safe current dose, computed from the soaped electrode area, might be a coagulating dose when computed for the area over which current is actually passing. The unsoaped electrode is the safest.

In using dry electrodes, increase the current rate very slowly until the patient tells you that there is a feeling of moisture under the electrode; then the amount of current can be increased to the computed safe maximum. It is always better to give a little less current and maintain a comfortable degree of heat over a longer period, than to utilize a higher degree of heat for a shorter treatment.

Again I call attention to the fact that the area of the surface of the electrode is not always the size of the contact being made, and the tolerance of the skin to heat in different portions of the body varies, so this too must be taken into consideration. For instance, the palms of the hands and soles of the feet have tough skin layers in which there is a poor blood circulation. In these areas the application of the electrode must be carefully made and the current increased slowly to tolerance. The same precautionary measures must be observed with areas about bony prominences, for the circulation in the underlying tissues is poor. Once there is a moistening of the electrode

by perspiration, one may safely continue to increase the current again to tolerance, but it is safest to leave it at the point at which the patient can best tolerate the heat.

Space will not permit the further explanation of many of the finer points in the applications of diathermy which make the difference between success and failure with this mode of treatment, but enough has been said to indicate that care and attention must be given. The practice of permitting a patient to receive the same treatment repeatedly at the hands of the most competent technician is to be condemned. This statement is not made in the spirit of disparaging the technician, but because of a pernicious practice which seems to be becoming popular in busy clinics; that of writing the physical therapy prescription, and letting the technician take care of the case.

As with the opening words of this paper, and the opinion of Osler, the practice of medicine is changing and much is being done without prescriptions, as of the old school; but I doubt that we will ever get so far away from our old methods of practice, which included the frequent observation of our patients, as to be able to turn them over to the technician in physical therapy and only observe them from time to time, to note the progress, if any.

Close contacts of personally supervised treatments are still necessary. It happens not infrequently that treatments must or should be changed with each application. Such necessity may escape the attention of the technician, and many unnecessary and harmful treatments might be given. This is but one of the many reasons against prescription writing and the clinical application of physical therapy by technicians.

Concluding, it is my opinion that by physical means the practice of medicine has made a wonderful advance and will make greater strides, but care and caution are necessary to prevent serious mistakes which will only bring disrepute on a worthy means of treatment.

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THE PLAN

It is not religious or racial toleration that mankind needs today so much as knowledge of the Plan behind life that makes society what we find it. You do not have to fight; you do not have to struggle; you only have to KNOW.—WILLIAM DUDLEY PELLEY.

CLINICAL MISCELLANY

Should the Relatives of Patient Be Shown His X-ray Plates?*

TO WHOM do the x-ray plates belong, the institution or the patient? Does the information secured from their study fall in the classification of a privileged communication, the details of which should be known only to the physician?

A decision that has been reached in a number of instances where the matter has been brought to the knowledge of a court for judgment is that, although the patient does pay for the x-ray study, the plates necessary to the accomplishments of the desired result are but a means to an end and therefore belong to the institution and not to the patient. In view of this, then, it may be said that relatives of the patient have no more right to view x-ray plates than they have to be fully informed concerning the steps taken in performing a Wassermann reaction or in carrying on any other study procedure in the interest of the hospital patient. If such a request is bona fide, the physician may, if he so chooses, demonstrate a plate as a courtesy to relatives or may inform them concerning the pathologic condition found as the result of an x-ray examination.

Physical Therapy in Dentistry

ONE of the difficulties in using light therapy in dental infections lies in the failure to judge the resistance of the patient. If the patient's resistance is already taxed to the limit and there is a localized infection, wherein the bacteria are far in excess, and it would be impossible for the patient to supply more white blood cells, there is some danger of spreading the infection if light therapy (infrared, visible and ultraviolet) is applied. In this case, probably an ice pack would prove more beneficial.

Wave energy does more to reduce the number of long and painful treatments than does any other procedure in dentistry. It increases resistance to fight against infection; supplies the vitamin D necessary to calcium metabolism; makes possible stim-

ulation of circulation in local areas; and establishes more rapid regeneration of tissue.—C. B. HOLMAN, D.D.S., of St. Louis, in *Internat. J. Orthodont. Oral Surg. & Radiography*, Feb., 1931.

Send your name to us for the first issue of the **JOURNAL OF VITAMINS**.

Air Sickness Cured by Ultraviolet Irradiation

A man who, during a course of nine lessons in flying, suffered from extreme air sickness (headache, vomiting, dizziness, etc.) was cured by ultraviolet irradiations, beginning with a 4-minute dose, given both to front of chest and abdomen and back, at a distance of 3 feet, using a mercury vapor lamp. The treatment was given every second day, increased 1 minute each time for a total of 6 treatments.—DR. H. WATERS, in *Brit. J. Actin. & Physiother.*, Nov., 1930.

X-Ray Therapy and Whooping Cough

Roentgen therapy is unquestionably of value and offers perhaps the only means of achieving a rapid and definite change, amounting often to complete recovery, within a few days. The most striking result is obtained when x-rays are used within the first few days of the illness, but even if the treatment is delayed, it should still be tried, since it helps the vomiting and restlessness and decreases the number of the attacks.—DR. R. E. LOUCKS and B. R. DICKSON, of Detroit, in *J. Michigan S. M. Soc.*, Nov., 1930.

Oral Cholecystography

From the results obtained in more than 200 cholecystographic examinations, it has been found that this method of diagnosis of gall-bladder disease is not infallible. The roentgenologic findings should be carefully correlated with the history, physical findings and laboratory reports and, in borderline cases, if the clinical indications of a diseased gall-bladder are stronger than the roentgenologic evidence, then the clinical

*Reprinted from *The Modern Hospital*, September, 1930.

findings should form the basis of the diagnostic decision.—DR. R. C. PENDERGRASS, Americus, Ga., in *Am. J. Surg.*, Jan., 1931.

Send for your copy of "Who's Your Health Banker." Ready now.

Chronic Menorrhagia Cured by Galvanic Dilatation and Zinc Chloride Ionization

A case of persistent and copious menorrhagia was cured by galvanic dilatation of the cervix, with the negative pole in the cervix and distributing plates on the buttocks and pubes. The cavity of the uterus

was packed with fine gauze strips, soaked in 10-percent chloride of zinc solution, tied to the vaginal packing, retained 24 hours or less, then removed by the patient and isotonic salt solution vaginal douches employed.

The zinc chloride packings were used once a month. The galvanic dilatation was also a zinc ionization and repeated every four, seven and fourteen days. The currents were mild, never above 10 m.a. Improvement in the discharge began with the fifth galvanic treatment; the treatments were continued at increasing intervals for about 5 months, when the patient became normal.—DR. V. C. PEDERSEN, of New York, in *Am. J. Obstet. & Gynec.*, Jan., 1931.

RECENT ABSTRACTS

Paresis Treated by Diathermic Hyperpyrexia

The treatment of dementia paralytica (paresis) by induced fever was introduced in 1918.

In *J.A.M.A.*, Jan. 3, 1931, Drs. C. A. Neymann and S. L. Osborne, of Chicago, report that 25 cases of dementia paralytica were treated with hyperpyrexia produced by diathermy. Currents ranging about 4,000 milliamperes are used.

In order to force such heavy currents through the body with safety, specially large electrodes are necessary; the front electrode covers the chest and abdomen, and the entire back is covered by the second electrode. Both electrodes are held in place by a close-fitting jacket. Temperatures of about 104°F. or higher may be maintained for several hours, but the best temperature is around 103.5°. The average number of treatments was 15, given twice a week; 3 patients received over 30 treatments.

Sixty-six (66) percent of the patients went into a clinical remission; 8 percent were markedly improved.

No serious harm resulted to these patients from the treatment and there were no deaths directly or indirectly ascribable to the treatment.

Ultraviolet Irradiation in Angina Pectoris

Hasselbalch and Jacobaeus were probably the first to use ultraviolet irradiation for angina pectoris, using the carbon arc lamp. In *Brit. J. Actinother. & Physiother.*, Nov., 1930, Dr. E. Freund, of Vienna, reports on a series of cases treated during the past 4 years, using the mercury-quartz lamp which, it is claimed, has many advantages over the carbon arc in this field of irradiation. What is wanted chiefly is strong erythema.

Partial irradiation of the chest and back is employed, the area treated being more limited at successive seances.

The author uses a mercury-quartz lamp and a burner for a current of 220 volts, the ultraviolet irradiation given by this being much richer than with 110 volts. The first exposure is usually 10 to 12 minutes at 80 cm. distance. Subsequent exposures are for longer periods at shorter distances—15 minutes at 60, or 20 minutes at 50 cm. In some cases, 5 to 8 treatments suffice, but in others 15 to 20 treatments are necessary. Five to eight days seem to constitute the best interval between treatments, but the interval may be prolonged to 10 to 14 days after the first four or five treatments.

In the author's series of about 80 cases, the treatments were successful in over one-third; another third showed distinct improvement. It must be admitted, however, that in many cases the improvement is not permanent.

A Simple Scheme of Indoor Personal Exercises

Many of our patients need a simple system of physical exercises which, with a minimum of mental effort, can be carried out anywhere and will bring the greatest possible number of joints and muscles into action.

In *Brit. J. Actino. and Phys. Therapy*, for November, 1930, Dr. W. J. Smyth outlines such exercises, which are not to be used in patients with high blood pressure, a history of pulmonary hemorrhage, hemorrhoids or serious heart disease. The method is as follows:

Stage 1. Patient lies on the floor—or in bed without pillows. He slowly elevates his feet so that, with legs extended, the latter form an angle of 45 degrees with his body. He slowly lowers the limbs. Each movement should take 10 seconds.

Now, with lower limbs from hips to feet resting horizontally, the patient raises his body slowly, forming an angle of 45 degrees with his legs. He then slowly resumes the horizontal position.

Variations in speed and number of movements can be regulated to meet the requirements of each case.

Stage 2.—After stage 1 is completed, the patient assumes the erect position. With feet close together he stands on tip-toe and raises his arms over his head as high as possible, palms towards the ceiling. He then closes the hands as powerfully as possible, and, stooping forward he separates the knees; crossing the arms he touches the floor with his shut fists 12 inches apart. He raises himself slowly and repeats the movements.

In cases of obesity, the patient at first need only touch an object nearer than the floor, say the seat of a chair placed in front of him. Here again the speed and the number of the movement must be regulated for each individual case. In all cases it is desirable to carry out the movements in an airy room, and with the mouth open.

Radium Treatment of Cancer of Cervix

Dr. H. C. Pitts and G. W. Waterman, of the Rhode Island Hospital, in *Am. J. Obst. & Gynec.*, Nov., 1930, report a series of 92 cases of cervical cancer, in various clinical stages, treated by radium with a percentage of 17.4 of 5-year cures for all cases and of 57.9 percent for operable cases.

The authors think there should be some uniform method of classifying cases and of reporting results whereby the figures of different clinics could be compared. Advancement in methods of treatment can come only through further clinical experimentation, by each clinic developing its own ideas and technic, but all should conform to a like standard in describing and reporting results.

The Measurement of Therapeutic Ultraviolet

R. E. Estey, of New York, in *M. J. & Record*, Dec. 17, 1930, points out that, with the instruments and methods now available, it is difficult to measure therapeutic ultraviolet ray effects. No clinical instrument will compare accurately any ultraviolet source with any other ultraviolet source or with natural sunshine.

Further developments in ultraviolet therapy are dependent on at least the partial solution of several important physiopathologic problems. The first of these is the identification of various therapeutic effects with definite wave bands of radiation, including all spectral regions commonly used for therapy. This includes the erythral region, no less than the infrared or region of radiant heat, the region of visible light, etc.

The second problem of importance is the evaluation of therapeutic thresholds; that is, the questions must be answered, "What is the minimum amount of radiation which, if given over a long period of time, will produce a definite biologic effect?"

As soon as such instruments as are necessary are commonly available and in the hands of a large number of physicians, a literature will begin to be built up in which the clinical effects of ultraviolet radiation are closely correlated with the accurate physical measurements of dosage. This will be a new period in clinical ultraviolet therapy.

Eczema of Vulva and Anus

In *Brit. J. Actinother. & Physiother.*, Dec., 1930, Dr. Angus Savill, of London, Eng., expresses the opinion that in early cases of eczema of the vulva and anus, with mild erythema, a few doses of light, two to five times a week, aid progress remarkably. The mercury vapor lamp is used, beginning with a local dose of one minute and desisting if any erythema is observed. All healthy skin around the area to be treated should be shielded with paper or a fine towel, to guard from erythema.

The tungsten-arc lamp focused on the part—5 amperes, at 9 to 12 inches for 3 minutes—seems to the author to have a better effect on thickened and swollen perianal ridges. In severe cases with much thickening of the epidermis, salicylic and carbolic pastes may be given, to cause exfoliation.

For patients presenting much swelling and infiltration, high-frequency currents are found very useful. The long rectal vacuum tube is most helpful in cases of perianal swelling with internal piles and spasm.

Ultraviolet Tattoo in Infant Identification

The recent mix-up, in Chicago, of babies delivered to parents who insisted that the offspring at their home was not theirs, has recalled a method of ultraviolet tattoo suggested some years ago by Dr. Herman Goodman, of New York City.

In the January issue of the *Am. Journ. of Phys. Therapy*, published in 1928, Dr. Goodman gave a preliminary statement of the factors used in ultraviolet tattoo for identification. In the February, 1928, issue of *Physical Therapeutics*, a report was published of a demonstration given before the New York Electrotherapeutic Society, at which Dr. Goodman showed the immediate and late reactions of ultraviolet tattoo on both white and colored skin.

In March, 1928, the first mention was specifically made of ultraviolet tattoo of new born infants in an article, "Advances in Knowledge of Ultraviolet," which appeared in *American Medicine*. At that time, Dr. Goodman wrote:

"I offer the following practical application of ultraviolet tattoo to those who care to avail themselves of it. Since we have a tattoo which is visible for at least six months (if not longer), it seems practical to arrange it as a means of identification of the newborn, regarding which there has been some comment recently. I have already suggested to the obstetrician of one of our large hospitals that a tag might be stenciled with the serial number of birth, and used with a fifteen seconds' exposure to a water-cooled, mercury vapor arc in quartz, on both mother

and child. There would be a temporary erythema (sunburn) tattoo on both, visible in ordinary light until discharge of the patients; and then, under the filtered ultraviolet or "black light," one will still find the ultraviolet tattoo visible many months after it is invisible in ordinary light. Identification marks for the Army and Navy, and for criminals may be evolved in the same way."

Diagnosis of Diaphragmatic Hernia

From a study of the literature and experience acquired at the Mayo Clinic, Drs. A. B. Moore and B. R. Kirklin reach the following conclusions regarding the roentgenologic diagnosis of diaphragmatic hernia, as given in *J.A.M.A.*, Dec. 27, 1930:

The present status of the roentgenologic diagnosis of diaphragmatic hernia may be summed up as follows:

1.—The incidence of the condition is higher than has been assumed, and hernias at the esophageal hiatus are relatively common.

2.—Hernia should always be considered in examinations of the thorax, especially when anomalous shadows are seen in the lower thoracic fields.

3.—In examining the stomach, hernia cannot be excluded without the employment of recumbent postures and manual pressure over the abdomen.

4.—It cannot be excluded without examination of the large bowel, for the colon alone may be implicated.

5.—Its distinction from other lesions depends on the demonstration and identification of abdominal viscera above the diaphragm; neither normal nor altered respiratory movements of the diaphragm are reliable as differential criteria.

6.—The clinical significance of small, impermanent hernias at the hiatus, which are demonstrable only under more or less artificial conditions, has not been fully determined.

Roentgen-Ray Therapy in Thyrotoxicosis

In *J. Michigan St. M. Soc.*, Nov., 1930, Drs. R. E. Loucks and B. R. Dickson, of Detroit, point out that the role of roentgen irradiation in the field of toxic goiter is becoming more firmly established with each passing year.

That thyrotoxicosis forms a very complex problem has long been appreciated. Experience shows that certain cases fail to respond satisfactorily to irradiation but do respond to surgery; on the other hand, cases, having a recurrence following surgery, seem to be permanently controlled by irradiation.

It now seems that the case which is not controlled permanently by irradiation is usually identical with that requiring two or more operations; this type is almost always associated with an incurably irritating environment or an inherited, weak and unstable nervous chassid. Of course, in the case of the large goiter with marked pressure symptoms and disfigurement, the removal of the offending mass is indicated. However, it may be assumed that the vast majority of thyrotoxic cases can be controlled equally well by either irradiation or surgery.

NEWS NOTES



Lenard Rays

Lenard rays are electrons, moving at high speed outside the tube in which they are generated. They produce hitherto unknown chemical reactions in substances exposed to them, as well as physical changes, and have been used for experimental purposes in chemistry, biology and luminescence. They have also been employed in the treatment of cancer and in certain skin diseases.

The picture shows Dr. C. M. Slack, research engineer of the Westinghouse Lamp Co., who recently received a prize of \$500 for discovering a method of blowing a delicate glass bubble in the end of the Lenard ray tube, which permits the rays to pass much more satisfactorily than the thin metal foil which was formerly used. He is holding one of the tubes.

Illinois Radiological Society

At the April, 1931, meeting of the Central Illinois Radiological Society, held at Peoria, Illinois, the Society voted to change its name to that of the ILLINOIS RADIOLOGICAL SOCIETY, in order to indicate more correctly the scope of its membership, and to make *The Radiological Review* (63 East Lake Street, Chicago), its official publication.

The officers of the Society for 1931 are: Doctor C. E. Morgan, Mattoon, President, and Doctor Fauntleroy Flinn, 220 South Webster Street, Decatur, Secretary.

THE · SEMINAR

CONDUCTED BY
MAX THOREK, M.D. (Surgery)
GEORGE B. LAKE, M.D. (Medicine, Ethics and Economics)

[NOTE: Our readers are cordially invited to submit fully worked up problems to the *Seminar* and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 1st of the month following the appearance of the problem.

Address all communications intended for this department to *The Seminar*, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.]

PROBLEM NO. 4 (SURGICAL)

Presented by Dr. Max Thorek, Chicago
(See CLIN. MED. AND SURG., April, 1931,
p. 276)

Recapitulation: The patient, a married woman, 42 years old, with three children and a non-significant family and personal history, began to be short of breath on exertion and noticed distention of the belly, two weeks before she was seen. She had been bleeding from the uterus for six months but had lost no weight.

The only significant abnormalities found on physical examination were: Fluid in the chest and abdomen, which latter was distended; liver slightly palpable; uterus enlarged and bleeding, with a patulous os and an offensive discharge.

Thoracentesis was performed and about 1,500 cc. of slightly bloody fluid removed, showing no unusual findings. This was repeated, with similar results, ten days later. In spite of this, the patient had a good appetite and did not feel especially ill.

Requirements: (1) What is the cause of the uterine bleeding? (2) What would you do to relieve the hemorrhage? (3) If surgery is to be done, what anesthetic would you use?

DISCUSSION BY DR. BENJAMIN GOLDBERG,
CHICAGO, ILLINOIS

The two conditions which stand out as possibilities in this patient are carcinoma and tuberculosis. The foul, bloody uterine discharge and the gradually developing ascites frequently occur in malignant disease of the ovaries; while the specific gravity (1.013) of the pleural effusion speaks for a transudate and for carcinoma.

1.—The uterine bleeding is more likely to be the result of malignant changes involving that organ, although marked congestion of the uterus occurs occasionally, associated with a vascular neoplasm of the adnexa.

2.—The diagnosis is probably cancer of the uterus or ovary, with metastases in the peritoneum and right pleura. Tuberculosis is a secondary consideration.

3.—I suggest that bleeding from the uterus is to be treated by radium or actual cautery.

4.—Anesthesia, because of the recurring pleural effusion and displacement of the mediastinum, should be local (spinal block anesthesia preferred) for the exploratory laparotomy.

DISCUSSION BY
DR. J. R. STURRE, MINNEAPOLIS, MINN.

Differential Diagnosis:

1.—Tumor of the uterus.

A.—Adenocarcinoma of the fundus.

B.—Myoma or fibromatous change.

2.—Incomplete abortion.

3.—Blood dyscrasia — leukemia, etc.
(ruled out by blood smear).

The evidence is against incomplete abortion, because there is no fever, no leukocytosis, and bleeding has been present for 6

months. She could have retained membranes for 6 months and flow and have an offensive discharge, but the other findings are not supportive of this.

Tumor of the uterus is the most likely diagnosis, and it must be considered carcinomatous until proven otherwise. I believe this to be a necrotic adenocarcinoma of the fundus, with chest (probably pleural or perhaps hepatic) metastases. The absence of cancer cells in the fluid removed from the chest means nothing.

Her high hemoglobin and red blood cell count speak against cancer, but do not rule it out.

There are many other tumors of the uterus which she might have—polyp, intrauterine fibroid, pedunculated fibroid, etc. However, any bleeding of 6 months duration is cancer until proven benign. My answers to the requirements are:

Cause of the bleeding: Tumor of the uterus.

Probable Diagnosis: Adenocarcinoma of the fundus, probably necrotic. She must have a diagnostic curettage.

For the hemorrhage, in her present condition, I should do nothing. X-rays and radium are contraindicated, because of the probable infection present, shown by open os and offensive discharge. Hysterectomy is contraindicated, because she already has metastases.

I should do a diagnostic curettage, and decide my future treatment on the findings. If I could clear up the chance for infection, I should have her treated with x-rays, or would insert radium.

As to anesthesia, there is no contraindication to the use of nitrous oxide or ethylene, for a dilatation and curettage. Anything more extensive would call for the use of spinal anesthesia.

DISCUSSION BY DR. C. F. BARBER,
FELICITY, OHIO

The uterine bleeding, in this case, may arise from a neoplasm, possibly a chorioepithelioma.

Curettement seems to be indicated, if done judiciously, for both diagnosis and treatment of the hemorrhage. Metastases could account for the symptoms in the thoracic cavity.

If a diagnosis of chorioepithelioma is made, the prognosis is not good and it would be impossible, without studying the patient, to decide whether a panhysterectomy

is indicated or whether radium treatment might be preferable. In any case, inhalation anesthesia should not be used for this patient.

DISCUSSION BY DR. DISRAELI KOBAC,
CHICAGO, ILLINOIS

In connection with this problem, it may be of interest to emphasize the fact that no other branch of medicine has been more assiduous in the search for efficient methods or technics than has modern radiology. The medical profession, particularly the surgeon, is fully aware of the tremendous difficulties with which he is confronted in the presence of malignant growths. In the absence of serologic or biochemical tests, the surgeon must still depend upon the biopsy report for definite diagnosis, and upon radical extirpation of the neoplasm and the use of radiologic methods, as a further step in the insurance against recurrences.

The modern trend in radium and x-ray therapy is in the direction of combining both agencies for the common good that they may yield. This is the newer method, advocated by some of the outstanding authorities abroad, and was so adopted in the present situation. The combined method offers the insurance (verified by experience) that, where x-rays and radium alone are, at times, insufficient to produce desired results, the combination of both (the sequence is immaterial) has yielded better results. The investigations of such a nature were, for example, carried out between 1924 and 1929, by the St. Bartholomew's Hospital Cancer Research Committee, in London, and their results published in a recent book ("Deep X-ray Therapy in Malignant Disease," by Walter Levitt; London, John Murray, 1930.)

In this particular case, following surgical intervention and allowing sufficient time to elapse, I have used radium plaques, applied to the lower right abdominal quadrant, maintained *in situ* for close to 100 hours. No reaction, other than a slight elevation of temperature (100°F.), was noticed following the treatment. This subsided after 48 hours and no other ill manifestations were noticed.

It must be added that, in this case, the radium application succeeded that of x-ray therapy.

SOLUTION BY DR. MAX THOREK, CHICAGO

This important problem deserves thorough discussion. The condition was a

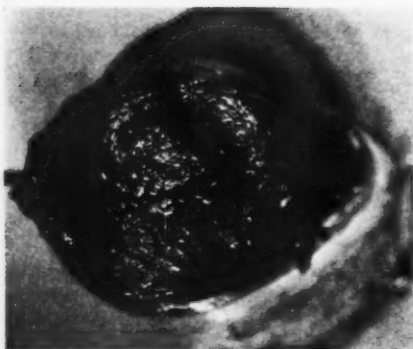


Fig. 1: Medullary cyst-adenocarcinoma of the ovary.

puzzling one. The patient is a very intelligent woman, mother of a number of children and very cooperative. Even a casual survey of the discussions by Drs. Sturre, Barber and Goldberg will show that the first thought in the case was that of a possible malignant disease.

In order to rule out intrauterine neoplasm, a diagnostic curettage was done, under local anesthesia. In passing, I might say that one can do thorough perineal work, curettements and cervical repair work, by thoroughly infiltrating the tissues with a one-half of one percent solution of procaine. This was done in this case and the curet brought forth a great deal of hypertrophied endometrium. A frozen section of the curetted tissue disclosed it to be of benign nature. Nevertheless, I destroyed the entire endometrium by electrocoagulation and the endocervix by the actual cautery. This procedure eliminated the worry incident to possible intrauterine disease.

As to the intrauterine condition, the possibility of incomplete abortion, as Dr. Sturre suggested, and of the chorioepithelioma, which Dr. Barber speaks of, was eliminated with the destruction of the endocervix and the endometrium.

The patient reacted well; however, the chest continued to fill up and the ascites persisted. She was apparently losing ground. A number of thoracenteses were necessary to relieve the respiratory and cardiac embarrassment, incident to the accumulation of the fluid in the chest. (See x-ray studies in the original presentation of this problem in the April issue of CLINICAL MEDICINE AND SURGERY).

The condition of the patient became visibly aggravated and operation was decided upon. What anesthetic was indicated un-

der these conditions? Inhalation anesthesia of any sort, in the presence of cardio-respiratory embarrassment, was out of the question. Local anesthesia, I could not look upon with much favor in this instance. Spinal anesthesia seemed the logical procedure. Neocaine was used and acted well.

Upon exploration of the abdomen, a large tumor mass, in the right adnexal region, having the appearance of a placenta (Fig. 1), was found. The resemblance of the tumor mass to placental tissue was so great that a possible ovarian pregnancy was thought of. Having reported such cases in the literature, I became suspicious. The liver, omentum, pelvic and other accessible lymphatic glands were thoroughly examined. No metastases were found. The tumor mass was removed (right salpingo-oophorectomy), the abdomen closed and the patient returned to bed in excellent condition.

The specimen was submitted to our pathologist, who reported as follows:

"Specimen of Ovarian Tumor: The specimen consists of a partially-encapsulated mass of soft, vascular, spongy tissue, measuring about 20x10x8 cm., in its greatest dimensions. The wall of the capsule is about 5 mm., thick with smooth surface and normal-looking fallopian tube attached. This capsule encloses about two-fifths of the mass; the rest projects beyond the limits of the capsule as a soft, fluctuant tumor, with its external surface slightly roughened and a fibrinous coating externally. In the deeper portions of the mass are found areas of soft, edematous, yellowish-white tissue. The microscopic sections show medullary cystadenocarcinoma of the ovary."

A microphotograph of the specimen is shown in Fig. 2.

About this time the report from the laboratory, on the guinea pig inoculated with the fluid from the chest, six weeks after inoculation, reads as follows:

"The pig was killed and autopsied on April 14, 1931, and no evidence of tuberculosis was found."

After the operation, the patient made rapid progress, under a dietetic and hygienic régime, which was supplemented by deep x-ray therapy as follows: 140 peak volts, at 50 cm. distance, 5 milliamperes, for 15 minutes, through 1 mm. aluminum and $\frac{1}{4}$ m.m. copper filter, over the lower abdomen; two ports of entry; one treatment each day for four days; the treatment to be repeated at the end of a six-week period.

Treatments were given on April 7 and 8. Following the second treatment, the patient experienced some nausea, so the third treatment was deferred one day, to



Fig. 2: Medullary cyst-adenocarcinoma of the ovary. (A) Cyst with squamous lining, from which carcinoma may have originated; (B) Strands and columns of carcinoma cells running through the ovarian stroma. (Magnified 110 diameters.)

April 10. The fourth and last of the series was given April 11.

Dr. Disraeli Kobak, our physical therapist, supplemented the x-ray therapy by radium. The technic used is reported in his discussion of the case.

The patient remained in the hospital a few weeks and was discharged, free from shortness of breath or any other symptoms referable to the cardio-respiratory apparatus. No more ascites nor pleural effusion occurred. At the present writing she is constantly gaining ground and is in excellent health.

The discussions of this case are to the point and truly worth while; particularly is Dr. Benjamin Goldberg's analysis of the case illuminating. While he had the advantage over the other discussants of having seen the patient, nevertheless, prior to any operative procedures, he placed the possible diagnosis of neoplasm, with possible metastases in the chest, as first on the list, and accorded tuberculosis second place. At that time he had no laboratory findings nor preoperative findings to go by. His deductions were based solely on subjective and objective manifestations. Subsequently, of course, laboratory findings were supplied him.

In tumors of the ovaries, one must be

very cautious. They may be either extremely malignant or totally benign. The age of the patient does not seem to play an important part. We find both types of neoplasms at practically all ages. Adenocarcinoma is the most malignant of all ovarian diseases and is of epithelial structure. It may be either primary, as the original ovarian tumor, or it may be a secondary manifestation, either due to degeneration of a glandular ovarian cyst or any other ovarian tumor that has undergone malignant metamorphosis; or it may be a metastasis from some other organ, either contiguous (cervix, corpus uteri) or from some other viscus (colon, stomach, etc.)

The association of carcinoma is very often observed with glandular and papillary cystoma. The etiology is obscure. The histologic evolution creates enormous proliferation of typical glandular (?) tissue. Often comparatively young individuals are afflicted. The epithelium is at first cylindrical and then assumes an atypical form, penetrating underlying structures and assuming an alveolar structure. The condition may be unilateral or bilateral. The tumor may be very small or extremely large in size. The evolution is usually rapid and metastases appear in many parts of the body, particularly in the omentum. When they do appear on the intestines, they assume the form of hard, white, flat bodies in various groupings.

The clinical diagnosis is usually very difficult, unless celiotomy is performed and the tissues subjected to microscopic examination. Errors in diagnosis, as can be seen, are very frequent and the surgeon must ever be on the alert for the occurrence of these still rather mysterious manifestations in ovarian pathology.

The treatment is necessarily surgical, but *must* be supplemented by radium and x-rays.

Numerous cases are reported in the literature in which radium and x-rays have yielded excellent results. Improvement has been noted, lasting in some cases for months and years. Even in very advanced cases, an arrest of the condition has been noted in many instances. If the diagnosis is made promptly, and the treatment instituted is thorough, the prognosis is, of course, better, particularly if the patient secures the benefit of a concerted action of the surgeon, radiologist and x-ray therapist.

PROBLEM NO. 6 (OBSTETRIC)

Submitted by Dr. I. E. Crack, Hamilton, Ont., Can.

Primipara, age 30 years; last menstrual period May 20, 1930. Only illness of importance in her history was a severe erysipelas of the leg in 1924, which left the right leg chronically enlarged.

The patient reported regularly at my office for observation, about once a month, up to about December 15, 1930, when she ceased going out, but sent urine for examination. Her urine and blood pressure remained normal up to the last specimen sent in, on Jan. 15, 1931.

On Feb. 11, 1931, wishing to examine her, I called at her home, and found her with a blood pressure of 180/100. Her legs and face were swollen and her urine loaded with albumin. There were no casts, but some red blood cells. I put her in bed and on a milk diet.

At 8 A.M. Feb. 18 the membranes ruptured and there was some "show," but no labor pains. The patient was sent to hospital, where she had a good deal of twitching of the arms and legs, and seemed on the verge of convulsions.

I made one vaginal examination under very careful technic. There was very little dilatation, a breech presentation and no labor pains. I gave morphine, to control the twitching, and colon irrigations.

Her blood pressure, on Feb. 19, was

180/110 and she was voiding about 20 oz. (600 cc.) in 24 hours, with albumin and red blood cells. Pulse, 80 to 100; temp., 98.2°F. Labor did not come on. Blood chemistry tests showed urea nitrogen, 57; creatinine, 2.35.

At 4:30 P.M., Feb. 19, a consultant advised a cesarean section, which was done under spinal anesthesia. A living child was delivered and the mother seemed to do well for the first 24 hours, when her temperature rose to 105°F. and pulse to 150.

Following an intravenous injection of 1,500 cc. of 5-percent dextrose solution, the temperature fell to 99° and the pulse to 110. The abdomen was soft throughout and not tender.

With bowel irrigations and intravenous dextrose injections, the next 24 hours seemed to indicate that the patient would recover; but on the third day after the operation she began to vomit, her abdomen became distended, the urine became less in quantity and the woman died on the fourth day. Her abdomen remained soft, and gas and fecal matter were expelled up to the time of death. Blood-chemistry studies on the last day showed urea nitrogen 90; creatinine, 3.00.

Cause of death: Toxemia.

Requirement: Criticize the handling of the case—cesarean section versus expectant treatment in toxemia of pregnancy.

POPULAR EDUCATION AND SOCIALIZED MEDICINE

It does not appear that general socialization of medicine would be the remedy for present difficulties. The remedy appears to be in the education of the public to the value of proper medical care at the proper time, whether it be preventive or curative medicine. Organized Medicine and all of its subdivisions must assume this responsibility, if it is to maintain its independence. I believe that the county units, backed by the State and National societies, hold the main key to the situation.

—DR. C. A. HARPER, Health Officer of Wisconsin, in U. S. Daily.

A GOAL OF LIFE

Great numbers of people are getting nowhere in their lives because they are aiming all over the lot or else are not aiming at all. To such people, the idea of devoting a half-hour, every day for a month, to constructing some effective goal for themselves, that shall be both attractive and possible, is a revolutionary thought. Yet this idea is fundamental to success.—FREDERICK PIERCE, in "Mobilizing the Midbrain."

THE · CLINIC

UROLOGY

Prostatic Disorders

By EDWIN W. HIRSCH, M.D., Chicago

ENLARGEMENT OF THE PROSTATE GLAND AND VESICLES, DUE TO RETENTION OF NORMAL SECRETIONS

I SHALL present several prostatic cases, the first being that of Mr. A. G. This apparently healthy man, who gives his age as 57 years, was referred to the urologic department because of urinary frequency. He entered the clinic one week ago, having been referred by his family physician, with the diagnosis of hemorrhoids. His physician did not make a rectal examination but, because the patient complained of a sensation of fulness in the rectum, concluded that the man had "piles" and referred him for operation. A very careful rectal examination has been made and no disease can be found.

The principal disability with which this man suffers is urinary frequency. He tells us that he has to arise 4 to 5 times at night to empty his bladder and that during the day he is compelled to void every hour or two. At no time does he pass a great deal of urine. His urinary trouble commenced 9 months ago. Then he was obliged to arise only once during the night. Gradually his condition has become worse and, because of his broken sleep, he feels wretched. There is no pain on urination, but he experiences a moderate amount of burning.

History: His marital history is of interest and importance. He was married in 1901, but separated from his wife in 1903, because of his sexual incompetency. All his life he has suffered with *ejaculatio praecox*.

During the past 27 years, he has had sexual contact only at infrequent intervals, but during the past 4 years, he has abstained from sexual relationships entirely.

Physical Examination. The general appearance of this man is good. His blood chemistry, which was studied this morning before breakfast, is within the normal limits; his blood pressure is 130/80; his urine is clear and essentially negative.

Now that he has voided, I shall insert this soft rubber, olivary-tipped, Tieman catheter into his bladder, to ascertain the amount of residual urine present. I have drained off 75 cc. of urine, which means that, after this man urinates, 75 cc. of urine remains in his bladder.

Rectal Examination: On inserting my finger in the rectum, I feel a large prostate. By the patient's reaction you can infer that his prostate is tender to pressure. By exerting a moderate amount of force with my forefinger, I cause several drops of thick secretion to appear at the meatus, which I collect on this glass slide and cover with a cover glass. Microscopic examination of the secretion expressed from the prostate shows several clumps of pus cells, a few red blood cells, many dead spermatozoa and a few motile ones.

Cystoscopic Examination: You will please notice that I am distributing this local anesthetic through the posterior as

well as the anterior urethra. Then I allow 5 minutes to elapse before I insert the cystoscope. Most patients dread a cystoscopic examination, because they claim the pain is excruciating.

There are two urologic dicta which I hope that you will never forget. They are: (1) The patient must not be made to suffer needlessly; and (2) the possession of a cystoscope does not make a cystoscopist.

You will note that I am using a liberal supply of lubricating jelly, so as to facilitate the introduction of a rigid instrument through a very delicate and sensitive canal. Patients will return to the physician who does not hurt them unduly.

Now let us look into this bladder. Cystoscopically, the prostate protrudes considerably into the bladder and the bladder muscle is hypertrophied. The indigo-carminine is being expressed from both ureters in normal concentration.

Clinical Impression: Enlargement and distension of the seminal vesicles, due to accumulation of seminal secretion; enlargement and distension of the prostate gland, due to accumulation of prostatic secretion; inflammation of the bladder neck (the posterior urethra and prostate), resulting from inflammation within the prostate.

Discussion: I shall not advise this man to be operated upon. His prostate is enlarged, to be sure. Because of his age, he is in the prostatic zone, but 75 cc. of urinary retention and frequency are no indication for alarm. This is not a case of true hypertrophy. I shall recommend prostatic massage twice a week; hot sitz baths of 10 minutes duration, twice a day; a urinary sedative*, by mouth, and a suppository, containing a small amount of belladonna and opium, to be inserted into the rectum at bedtime. I especially recommend that he wear warm underwear, to avoid chilling the skin.

As to the cause of this enlargement, we have a very promising clue to this man's disability in his marital history. He tells us that he has always been sexually weak, but during the past four years he has been continent. Such histories are typical. The secretion formed within the prostate has not been evacuated, and so it collects within

the prostate and causes the gland to swell. The ease with which we massaged out secretion containing live sperm is proof that his seminal vesicles were full to overflowing. By massage we mechanically deplete the prostate and vesicles.

Pollutions drain the prostate of the young or middle aged man, but where there is a boggy, atonic prostate and the sexual function has never been exercised much, pollutions will be ineffectual, because of the atonicity of the prostatic musculature. I believe that the prognosis in this case is very good.

Subsequent Course: This man, after one week, stated that he had to arise only once at night and that he could hold his urine for 4 hours during the day.

ACUTE INFLAMMATION OF THE PROSTATE GLAND

Mr. A. L., aged 61 years, a marvellous specimen of physical humanity, entered this clinic one month ago and at that time complained of urinary frequency. He was obliged to empty his bladder every two hours. He had no other complaint, except that of "bladder weakness." His trouble began 6 months ago, while playing golf on a wet, cold day. After his round of golf, he became chilly and noticed that "his bladder and kidneys were weak." One of his friends advised him to take a hot bath and to drink some hot whiskey and water. This he did, but his urinary frequency did not improve. He consulted two physicians, one of whom recommended an operation on his bladder neck.

When I saw him, a month ago, his prostate was enlarged and tender and the seminal vesicles were also sensitive to pressure. There was no residual urine in the bladder. In fact, the bladder was so irritable that, if two ounces of a weak irrigating solution were allowed to flow into it, he complained that he could hold no more.

The general physical examination, at that time, revealed no important bodily defects. His intravenous pyelogram was negative. His prostate seemed to be about the size of a small orange, but it was very soft. Cystoscopically, the prostate protruded uniformly into the bladder. I recommended dilation of the prostatic urethra, instillations and massage of the vesicles and prostate twice a week, also the urinary sedative previously mentioned, by mouth.

Two weeks later, I examined him again

*1/2 Methenamine 8.0
Tr. Hyoscyamus 15.0
Fld. Ext. Triticum 90.0
Elix. Simplex q.s. ad 100.0
Sig: Two (2) teaspoonfuls, after meals and at bedtime, for three days; then one (1) teaspoonful after each meal.

and to my surprise found that this large prostate had receded to almost its normal size. However, the seminal vesicles were still exceedingly tender and, on rather firm pressure, I was able to express some vesicular contents. I made a smear of this secretion and stained it. There were many leukocytes and numerous clumps of bacteria, so I advised continuation of the treatment.

This patient now states that he can hold his urine for four hours easily and, though he must arise once during the night, he does not mind it in the least.

Discussion: Though the causes of urinary frequency are many, it was clearly evident from the first, that the site of this man's trouble was in his prostate. What caused the prostate to swell so suddenly, very likely, was the cold which he contracted, while playing golf. Undoubtedly, a very mild inflammation had been present in this prostate, but the undue exposure lowered his resistance and so his *locus minoris resistentiae* reacted.

In seeing a prostatic patient for the first time, it is not wise to be too cock-sure in one's diagnosis or prognosis. Little did I think that this large prostate would, within two weeks, recede to almost normal. Most of the swelling was undoubtedly due to edema. The seminal vesicles, however, are still tender and constitute a focus for future infection. Consequently, the vesicles will have to be massaged periodically for some time. Remember, vesicle infections tend to be resistant.

Some physicians believe that a large prostate implies obstruction and retention. That is not so, however. Retention of urine does not depend upon the size of the prostate. I have seen some very large hypertrophies, with no retention, and some very small, hard prostates with considerable retention.

The mechanism of retention in prostatic enlargement is not simple, as many conceive it to be. Contrary to the generally accepted idea, the enlarged prostate does not obstruct the outflow of urine by acting as a dam. The prostate has been termed an obstructing mass but, in reality, it does not obstruct. When a prostate enlarges, it infiltrates the musculature of the bladder neck, which acts in the capacity of a sphincter and causes this sphincteric musculature to contract tighter than it normally would. This necessitates an increased blad-

der pressure, to force the urine past this tightly contracting diaphragm. To augment the bladder pressure, the bladder musculature hypertrophies. For a time, this added force suffices to empty the bladder. Later the individual must strain—hold his breath while urinating—and the increased intra-thoracic pressure is transmitted to the abdominal cavity. The increased intra-abdominal pressure enhances the emptying power of the bladder, and also causes it to bulge above the sphincter and thus permits retention.

A SUPPURATING PROSTATE

The third patient, whose age is 62 years, was referred by the resident of the surgical department, who has made the following notation on the record: "Prostate about three times normal size and protrudes markedly into rectum. Recommend prostatectomy."

This patient tells us that his urinary difficulty began three years ago, following an attack of typhoid fever. From the history and subsequent course of events, I have no reason to doubt he suffered a genuine infection from *bacillus typhosus*. Since then he has had to arise once every night to urinate, but during the past two weeks he has been compelled to get up three to four times a night. He has been frightened by this nocturia and seeks relief. The urine which he has voided into the glasses appears very murky.

Examination: I can fully concur with the resident in regard to the size of the prostate. It is one of the largest masses of the kind that I have ever felt. Nevertheless, I do not think that it is a true hypertrophy. The prostate is too soft for a real hyperplasia.

I shall now pass this curved catheter bougie, to determine the amount of residual urine and also for the purpose of dilating the prostatic urethra. There is no residual urine present.

Now I shall again massage the prostate. You will notice that the thick, creamy pus at the meatus was expressed after I used a fair amount of pressure against the gland. This is, indeed, a "pus" prostate. By daily massage against a full bladder, this prostate will be returned to normal in approximately six weeks.

Discussion: It is very difficult to classify or correctly name this condition, because our terminology of prostatic disorders is

antiquated. We refer to several types of prostatitis, but what assurance have we that, because we think that the secreting or interstitial part is affected, it really is. Our present classification is impossible, because the diagnosis depends entirely upon the individual interpretation and a guess, based on the impression obtained by the examining forefinger. We need more designating terms.

A prostatic condition that follows a typhoid infection was very likely, originally, a typhoidal infection of the prostate. Later, the typhoid was replaced by *B. coli*. In any event this man has probably been carrying pus in this prostate for some time. Recently the infection has been progressing, and though he has free, frank pus in the prostate, which can be massaged out in great quantities, we cannot term this case an abscess of the prostate. We reserve that term to designate free pus in the prostate, with accompanying constitutional symptoms.

There is no indication for doing a prostatotomy in this case. This prostate can be evacuated satisfactorily by massage. We open prostatic abscesses only occasionally. If the constitutional symptoms are marked and the prostate does not show a tendency to rupture urethrally, it may be opened through the perineum. Today very few prostatic abscesses are so treated.

"BAR" AT THE NECK OF THE BLADDER (Prostatism Sans Prostate)

We shall now consider a very interesting problem in urinary retention. This man, whose age is fifty-one years, was first examined at this clinic about six weeks ago. He complained that he had had urinary difficulty for the past year or two. During this time he has had to urinate once or twice during the night, but occasionally he would sleep for six hours without having to void. He had about 100 cc. of residual urine, and a centrifuged specimen showed 10 to 15 pus cells per high-power field. Rectal examination was negative. On attempting to pass the cystoscope, I met with some increased resistance at the bladder neck but, by depressing the cystoscope for several minutes, I was able to gain entrance into the bladder.

Cystoscopically, the interureteral ligament was hypertrophied; the lower lip of the internal urethral orifice was prominent and the *bas fond* was well marked. The

prostate did not bulge into the bladder. In view of the fact that the prostate was not enlarged and that residual urine was present, we considered this case under the classification of "prostatism sans prostate." The internist reported that there was no constitutional condition that would explain the bladder condition. A Wassermann test on spinal fluid and blood was negative. No stricture was present.

Discussion: Some urologists would term this case a "bar at the neck of the bladder" and recommend some form of punch operation. I am, however, opposed to the procedure of cutting away a vital part of the bladder to relieve urine retention. It has been my good fortune to have handled a large number of similar cases conservatively, and my results are equal to those published by the "bar" enthusiasts, with this difference: My procedure is *without mortality*. The posterior urethra was dilated, the prostate and particularly the vesicles were massaged. Improvement was marked. Within a month after beginning treatment, the residual urine was reduced to two ounces. At present he has only an ounce of residual, which is practically negligible.

It may be difficult to comprehend how inflammation of the vesicles can cause retention of urine. In that regard, I would call attention to an article written by Belfield, in which he showed that infection of the vesicles may cause inflammatory swelling of the bladder neck. He recognized three types of vesicular lesions which could affect the bladder: (1) Acute infections of the vesicles, causing inflammatory swelling of the bladder neck; (2) chronic infection of the vesicles, causing chronic partial retention of urine; (3) fibroid induration of the bladder base, resulting from perivesicular infection.

The mechanism of this process is somewhat as follows: A substantial part of the bladder musculature is inserted directly into the prostate gland. This portion of the prostate is not covered by a capsule, so that infection from the prostate may directly invade the bladder muscle. Hence the bladder wall is indurated, either indirectly from the prostate (the vesicles being the original focus of infection) or by direct extension from perivesicular infection or by the inflammatory products which may surround an infected vesicle and extend directly into the base of the bladder. The fact that fewer bar operations are being

done is significant. When any new instrument or surgical procedure is introduced, the claims made for it are exaggerated. Successful cases are recorded in the literature. Failures and deaths do not usually get into the records.

BENIGN HYPERTROPHY OF THE PROSTATE

I first saw this man eight weeks ago. At that time he was suffering from acute retention of urine and had to be catheterized. He said then that he wished to be operated upon, for he had suffered several times previously with "stoppage of the water." His age being seventy-three, I was cautious about recommending an operation until I had an opportunity to make a careful examination, to determine his fitness for undergoing such a major procedure. The blood chemistry was normal; x-ray pictures of the heart, lungs and upper urinary tract were negative. An electrocardiogram was also negative. His residual urine was about 200 cc., was cloudy and contained pus, debris, bacteria and albumin.

In preparation for the operation, I inserted a Tieman catheter into his bladder and tied it in, so that it would remain in place. After draining his bladder for seven days, I was satisfied that the renal output was proportionate with the water intake and that the specific gravity of the urine was normal. I also tested the power of his kidneys to concentrate the urine and did a cystoscopic examination, which showed normal conditions.

All tests being negative, I did the first stage of a two-stage prostatectomy, under spinal anaesthesia. A large Pezzar catheter was inserted into the bladder and attached to a rubber tube that drained into a bottle alongside of his bed.

Everything seemed to progress satisfac-

torily for a week, but on the eighth day he complained of severe pain in his chest. His temperature went to 102°F. The medical man made a diagnosis of infarct of the lung and recommended $\frac{1}{2}$ gr. (32 mgm.) of codeine for the pain. Within a week the temperature subsided, and within ten days he was in a normal condition.

The question then arose, when the second stage should be done. I emphatically declared that I would not do it until the patient appeared to be a good risk. After building him up with good food, I did the enucleation. I put a Tieman catheter into his bladder through the urethra, and also a suprapubic drain, but the bladder spasms were so severe after the operation that I removed the Tieman catheter. In two days I removed the packing and noticed no undue amount of hemorrhage. In ten days I removed the tube and allowed the bladder to close. When the patient urinated, a few drops of urine were forced through a tiny sinus in the suprapubic scar. Sounds were passed every other day for a week and in two weeks the sinus closed.

It is difficult to lay down any arbitrary indications for the one-stage and the two-stage prostatectomy. In general, I follow the rule that, if the patient appears to be a good risk, I will do a one-stage operation. In all other cases I do a two-stage, because it is safer. In cases where there is chronic retention of urine, with prolonged obstruction, extreme sepsis and large residual, or where catheter drainage is not tolerated well, it is wise to do the operation in two steps.

The presence of a large, hypertrophied prostate, which shows no tendency to recede and which markedly interferes with the elimination of urine, calls for prostatectomy.

185 North Wabash Ave.

FAT

Fat is the cheapest tissue in the human body and the most unnecessary. It plays the part of a true parasite, insinuating itself into the tissues which it gradually replaces. It has a sly and subtle onset, first depositing itself in the abdominal viscera around the intestines, liver, diaphragm, kidneys and heart. It is noticeable that fat accumulates first around the muscles which are least used. The abdominal muscles, in most people, are poorly developed from long disuse.—DR. J. C. ELSOM, of Madison, Wis., in Phys. Therap., Jan., 1931.

CLINICAL · NOTES

AND

PRACTICAL · SUGGESTIONS

Special Training for Medical Reserve Officers

THROUGH the courtesy of the authorities of the Mayo Foundation, Rochester, Minnesota, and the Washington University School of Medicine, St. Louis, Missouri, arrangements have been made whereby a period of fourteen days of inactive duty training for Medical Reserve Officers will be given, without expense to the Government. The dates of this training are as follows:

Mayo Foundation, Rochester, Minnesota, October 18 to November 1, 1931.

Washington University School of Medicine, St. Louis, Missouri, November 8 to November 22, 1931.

These courses present to Medical Reserve Officers a two-fold advantage: (a) Medico-military instruction; (b) a refresher course in professional subjects. The courses are so arranged that a Reserve Officer can spend his morning hours in any of the clinics or other purely medical professional studies he desires. The afternoon and evening hours will be taken up entirely with medico-military subjects.

The custom of taking annual study courses has become so general among medical men that argument about its advantage is unnecessary. Furthermore, patriotic motives of a Reserve Officer, in the interest of National Defense and his advancement in the military service, have created a desire for periodic instruction in Medical Department Reserve matters. These two great medical centers have provided the ways and means whereby the two-fold purpose can be accomplished.

For the past two years, inactive duty training to Medical Department Reserve Officers has been given during the fall months at the Mayo Foundation, Rochester, Minnesota, for a period of two weeks. The authorities of the Foundation provided the facilities, including instructors, offices, class rooms, etc., necessary to carry on the school. All expenses incurred, except the salaries of the members of the Regular Army, were borne by the Foundation. The Washington University School of Medicine has now offered the same facilities, including clinical instruction in the various branches of medical practice and the clinical material, laboratories, museums, libraries of the school and lecture rooms, without charge. A group of faculty members has volunteered to give instruction and hold clinics during the period of training.

At our first inactive training camp at the Mayo Foundation, most of the students were Fellows of the Foundation or otherwise connected with the Mayo Clinic. A few were physicians from other parts of the Corps Area, who profited by having the mornings free to devote to observation of the work at the Clinic. The attendance at this school for the first year was thirty-three (33). The following autumn (1930), another two-week period of training was provided, with the same facilities as in the previous year. Fifty-one (51) Reserve Officers received instruction during this training period. The school was originally established because of the difficulty in granting leave to the Reserve Officers at the Mayo

Clinic for camp training in July, because of the fact that this was the rush season at the Clinic.

After conducting two of these camps, the authorities of the Clinic summarized the advantages as follows:

1.—A reserve officer, in convenient periods of the year, receives stimulating personal instruction along military lines.

2.—It provides preparation for taking the examination for the next higher grade.

3.—It affords a Medical Officer the satisfaction of knowing that he is better fitted for his present rank.

4.—It provides for the combination of military training with a professional observation course at a medical center.

Great interest was shown in these two courses and many of those who attended emphasized the importance of such a course, on account of the dual purpose offered a busy doctor; namely, training for the duties required of a Military surgeon and the opportunity for a refresher course in any specialty of medicine.

All applications for the course of training at the Mayo Foundation should be made to the Director of the Mayo Foundation through the Surgeon, Seventh Corps Area, and applications to take the course at Washington University School of Medicine should be sent to the Dean of Washington University School of Medicine, through the Surgeon, Seventh Corps Area. Applications made by Medical Reserve Officers, who reside outside of the Seventh Corps Area, should be forwarded through their respective Corps Area Commanders.

COL. GEO. A. SKINNER, M.C., U. S. A.
Surgeon, 7th Corps Area.

Ft. Omaha,
Omaha, Nebr.

The Uses of Sparteine

I HAVE read the excerpt from Dr. I Ochsner's article in *CLIN. MED. AND SURG.*, Feb., 1931, p. 146, on the use of sparteine sulphate in anuria. My experience differs from his. I have used it in total suppression of the urine in albuminuria, nephritis with suppression in measles, malarial hemoglobinuria and other causes and with success.

I have used it hypodermically, in infants, in 1- and 2-grain doses (adults 2 to 4 grains) and as a heart tonic, in spite of learned doctors to the contrary, in pneu-

monia and different forms of heart trouble, with better results than those following any other remedy.

My rule, after generally starting in with the initial dose hypodermically, is to leave a capsule containing 2 grains of sparteine and $\frac{1}{4}$ grain of caffeine citrate, and a tablet of digitalin and Strophanthin Co. (Abbott) directing one to be taken every 2 hours for 3 doses; then every 4 to 8 hours, as needed to maintain the effects. This is used, too, in the cases of anuria, except in the cases of children, where it must be given differently.

E. H. WINKLER, M.D.,

DeWitt, Ark.

If you want to see the first issue of the new **JOURNAL OF VITAMINS AND ACCESSORY FOOD FACTORS**, which is to appear in the summer, send your name and address to the Business Manager, **CLIN. MED. AND SURG.**, and say "Send the **JOURNAL OF VITAMINS**."

A Warning to Dentists*

IN DENTISTRY as in other fields of activity there has been a noticeable effect produced by the stringency of the times. Not a few members of the profession have suffered severe financial loss because of dwindled practices. Such conditions make ideal soil for the seeds of discontent and tend to produce a letting down of the bars of professional vigilance, paving the way for docile permission to certain manufacturerers to parade their products before the public as having professional endorsement, in return for their subtle smoke-screen of urging the public to "see your dentist." Thus comes the introduction of all kinds of advertising and publicity schemes, as remedies for business depression.

Never before have so many ideas appeared for the purported benefit of dentistry. Numerous individuals, small and big advertising agencies, are all contriving to interest the dental practitioner in some advertising or publicity plan "that will surely increase practice and is highly ethical." Some of these schemes are undoubtedly designed to break down the long established standards of ethical practice.

*Adapted from *Bul. Chicago Dent. Soc.*, Jan. 22, 1931.

Truly, these are stringent times, and for some they are especially so. To some, it might seem that any effort would be justifiable, whether or not it bordered on a breach of ethical practice, provided it brought patients and financial remuneration. However, thinking dentists will use caution in the consideration of any advertising or publicity plan which might be submitted to them. They will consider that, after all, most of these schemes are worked out by persons who are unacquainted with dentistry's problems, decidedly unsympathetic with its ideals, and deeply interested in lining their own pockets with what little money the practitioner might have left.

Thinking dentists will recognize that the cure for present conditions lies, not in the adoption of some questionable advertising proposition, and will refuse to contract for any of these colorfully presented schemes until they are certain that they are acceptable, according to the recognized precepts of ethical practice. Thinking dentists will agree that a little caution is advisable.

GEORGE H. WANDEL, D.D.S.

Chicago, Ill.

[This warning, while addressed to dentists, applies with equal force to physicians. Economic pressure is frequently the *reason* for the beginnings of professional laxity, but it is never an *excuse* for such conduct. Those who can weather the storm and keep a clear conscience will secure both visible and invisible rewards in the months and years to come.

There are, however, perfectly ethical ways to acquaint the public with the work being done in Medicine and Dentistry (not by individual physicians and dentists), and these should be sought, studied and used freely to educate the people regarding what the two professions have to offer.—Ed.]

Contract Surgery as Fee-Splitting

DR. G. F. CHANDLER, of Kingston, N. Y., states in a "filler" at the bottom of page 356, in the May CLINICAL MEDICINE AND SURGERY, that "fee-splitting is a cancer in our profession."

I wonder how many have considered what seems to pass as "ethical" fee-splitting by men with all the degrees of the American colleges after their names? I refer to high-priced operators, either in their offices or hospitals, who contract with insurance

and railroad companies, lodges or other corporations to do the same work at one-half to one-quarter of their regular fees, but refuse to share even a small percentage with the practitioner who feeds them. To me, this seems entirely wrong.

LLEWELLYN EDWIN BARNES, M.D.

Chicago, Ill.

Notes on Electrocardiography*

Heart-block is present if the distance from the beginning of the P wave, on the electrocardiogram, to the beginning of Q or R, is more than 20/100 of a second. When this occurs, ask if the patient has been taking digitalis, as that drug can cause heart-block.

A nurse can make an electrocardiogram (though she can not interpret it), but not a basal metabolism test (though she can figure it, after the test is made).

A patient is sometimes sent to a roentgenologist for a gastrointestinal series and, on fluoroscopic examination, a heart lesion is found which would account for all the symptoms; and yet the G. I. series is made, because the referring physician expects it and the roentgenologist needs the money. The profession should be educated to expect and welcome honesty among consultants.

EMMET KEATING, M.D.,

Chicago, Ill.

Medical Advertising

THE Council of Chicago Medical Society at its meeting of May 1, 1931, unanimously endorsed the annual observance of Youth Week, and our purpose, as physicians, during its observance should be to make known to every boy or girl and to their parents the importance of health to the boy's or girl's future; it being especially emphasized that throughout the period of youth is the time of importance for building strong, healthy and efficient bodies.

May I suggest, in making contacts, that:

1.—You send to your patients a letter emphasizing the importance of health in their boy's or girl's future, particularly the importance of regular physical examination to discover any physical defects which, if allowed to go unrecognized and uncorrected, may prove a very serious handicap to

*A few notes from a discussion before the Medical Round Table of Chicago, March 10, 1931.

that youth's future success and happiness.

2.—Take advantage of opportunities to talk to boys and girls about their health, and the care of their bodies, and go out of your way to create such opportunities. Explain and demonstrate some of the simple procedures of medicine, as diagnosis, laboratory tests, objectives sought in physical examinations, etc.

3.—Arrange to speak before clubs, organizations, school or church groups. This naturally applies to junior groups particularly, or to organizations having interested themselves in boys and girls; that is, Boy Scouts, American Legion, etc.

4.—Should you be called upon to speak or serve in any capacity by an interested group, do so, or help them to find some one who will.—From *Bul. Chicago Med. Soc.*, May 9, 1931.

[Since the matter of advertising, by physicians, is the subject of much discussion these days, it seems appropriate to call attention to several valuable methods which, as will be seen, are sanctioned by one of the largest and most influential local medical organizations in the United States, as being, not merely ethical, but also highly desirable.

While these comments were intended to apply particularly to Youth Week, which was observed May 17 to 23, inclusive, there seems to be no sound reason why they should not be used at any time.

In this connection, we believe that our little booklet, "Who's Your Health Banker," will prove decidedly helpful in a campaign of this kind and we shall be glad to have any physicians who have not seen it write for a copy, with price quotations on any quantities he may care to use.—ED.]

Pessary in the Pregnant Uterus

IN THE February, 1931 number of CLINICAL MEDICINE AND SURGERY, page 136, I read with interest, the case reported by Dr. Levine, of Grover, Colorado, in which he found a stem pessary imbedded in the placenta, following a delivery.

I can report a similar experience in a case attended by me Feb. 7, 1931. The woman is 33 years of age and had had five children previous to the latest arrival. The labor was perfectly normal and a seven-pound, male child was delivered without

difficulty. The placenta was expelled spontaneously and, upon examination, I found imbedded in it a gold-plated device which looks like the accompanying sketch (Fig. 1). She informed me that this had been

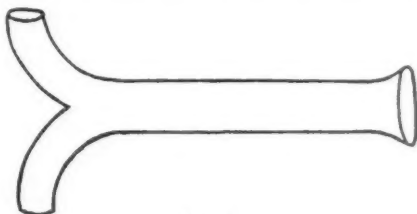


Fig. 1.

inserted following a childbirth two years ago, with a "positive guarantee" of its efficiency. Needless to say, she was quite provoked when she again found herself pregnant. She, too, believed that she had passed the device unnoticed sometime during the pregnancy.

A. E. McMAHON, M.D.,
Glenwood City, Wis.

[Dr. Levine's case sounded as if it might be unique, in view of the widely-held idea that a foreign body in the cavity of the uterus precludes the possibility of pregnancy. This second similar report casts grave doubt upon the validity of this teaching, and warns us of the un wisdom of giving "positive guarantees" of anything in medicine—except that we will do our best.—ED.]

Proctogenic Constipation

WHILE the most frequent form of constipation is that due to allowing the stool to lie too long in the lower bowel, there are also mechanical causes for the trouble, such as strictures, tumors, etc. Rarely does spasm cause constipation. Proctogenic constipation is the term used when the trouble is due to causes sharply limited to the rectum itself.

Some years ago a group of irregular surgical practitioners in Chicago maintained among their kind a sort of furore of interest in the spasmodic forms of constipation. No doubt it would be very easy to trump up cases of this kind, the surgeon conferring relief upon some cases by stretching the sphincter. In legitimate practice there are some cases in which relaxation of the sphincter gives aid, whether or not there is a simultaneous operation for

hemorrhoids, etc. But such cases as the following are, in my experience rare; the surgeon should, however, be awake to their existence and importance when he encounters them.

Mrs. X, thirty-five years of age, had had a mild attack of infantile paralysis in childhood, leaving the left side parietic. Subsequent incomplete development of that side occurred. As time passed constipation began and, during adolescence, it became confirmed and very obstinate. Heavy and repeated doses of mineral oil and various pills, together with enemas, were required for daily relief.

When she finally came to operation for right femoral hernia of the bladder, the rectum could be examined under anesthetic relaxation. The sphincter muscle was found to be enormously thickened and exceptionally developed longitudinally. Even under ether, the sphincter was tight to the gloved finger and the muscle was found to be massive and powerful. Except for the sphincter hypertrophy, the whole rectum seemed normal. Very thorough stretching was done, until the sphincter remained patulous. There was no evidence of other abnormality about the bowel, neural or otherwise.

To my gratified surprise, the patient immediately and wholly recovered from her long constipation. She has since had normal bowel movements daily and uses neither laxatives nor enemas. The bladder gives no further trouble since it was reduced and is normally retained in place.

It seems that the enormous sphincteric hypertrophy was due to the long, chronic, spastic neural disturbance. The resistance at the bowel outlet having been removed, slight contractions of the ampulla are sufficient to empty it, so that its mucous membrane is no longer irritated.

All the pelvic organs are free from irritability, while previously they were subject to spasm and pain. The part played by the irritated bladder, lying in the grasp of a femoral hernia sac, must have been great, as there was constant frequency of urination, with urine only slightly abnormal.

Despite the fact that the hernial healing was inadequate, the proctogenic constipation remains almost completely relieved by the stretching.

WELLER VAN HOOK, A.B., M.D.
Chicago, Ill.

Nembutal in Vomiting of Pregnancy

The vomiting of pregnancy is often distressing and sometimes difficult to control.

I recently saw a case which could be classed as one of pernicious vomiting, in which success was attained by the use of one of the newest synthetic barbituric acid derivatives.

For ten days I gave this patient a dose of $1\frac{1}{2}$ grains (0.1 Gm.) of Nembutal* at bedtime. Her nausea practically ceased after the first dose and she has had no further difficulty in retaining her food. Nothing else was done to relieve this patient, and the result was striking.

JAMES N. DUNN, M.D.

St. Paul, Minn.

Send for your copy of "Who's Your Health Banker." Ready now.

Climate and Tuberculosis

THERE was a time when change of climate was almost always recommended for tuberculosis. People believed that certain climates cured tuberculosis. They thought that dry air or mountain air or warm or cold air was better than some other kind of air and that the climate of the arid southwest or of Florida or of California would cure tuberculosis.

Medical opinion has changed. We no longer believe that climate will cure tuberculosis. We ask ourselves where treatment can be obtained of the kind required and within the means of the patient. A child or an aged person is seldom sent far away. A young man or woman may be advised to go away, if there is some good reason for it. The most important thing is good medical care, usually in a sanatorium, no matter what the climate is.

Good medical care can now usually be found near home, although twenty years ago one often had to go to a resort to find a tuberculosis specialist. Skillful doctors and nurses and good sanatoriums can be found in almost every State, and, as for climate, no State in the Union has found it necessary to go outside its borders to locate its State sanatorium. The home climate,

*We have seen a report (without details) of similar results from the use of Nembutal in vomiting of pregnancy, by Dr. H. D. Roads, of Cleveland, O. He gives $1\frac{1}{2}$ grains (0.1 Gm.), one hour before the evening meal which is retained, and the patient sleeps well afterward.—Ed.

even if it is the worst climate in the world, is best, if proper medical and nursing care is available there but lacking elsewhere. Many persons have lost their lives by going to a distant place reputed to cure tuberculosis, where they camped out or lived in a boarding-house or sought a light job; and they might have recovered if the money had been invested in proper treatment near home.

A wealthy patient can, of course, go where he pleases, wherever good treatment can also be obtained, and there is no reason why he should not do so; but it does not follow that, because a few persons may indulge in the luxury of climate, such indulgence is a common necessity. The average patient must get the greatest amount of good from limited funds. He should choose a sanatorium near home, not a hotel in a resort; a long period of treatment near home rather than a short period elsewhere; rest instead of travel; and proper food rather than scenery.

The average tuberculosis patient desires to go away. He seeks high adventure and self-sacrifice. To win a great fight he would brave new and unknown dangers. Also he wants to travel. And he still believes in the specific virtues of special climates. Like Naaman, the leper in the Bible story, he is willing to do some great thing for quick results. He would seek a mountain top or a desert where, he thinks, the waters are cleaner than those of Jordan and the air is purer than among the hills of home. But the patient is usually willing to take advice, and he should be told that the ordinary case of tuberculosis does not need a change of climate.

There are unusual cases, one in a hundred, perhaps, when a change of climate is actually needed, most frequently to escape hot weather. Cold weather is usually desirable. A radical change in the habits of the individual is often necessary. That is why he should go for the first six months to a nearby sanatorium, where the chief business is getting well. He lends himself to the routine of rest and more rest, asleep and awake, freely flowing air night and day, good food, proper food habits, and the other elements of sanatorium life. He learns to "play the game," and after graduation from a sanatorium he is a safe risk for his family physician to treat.

U. S. PUBLIC HEALTH SERVICE,
Washington, D. C.

Doctors Talk on Nursing

WHEN 756 physicians discussed the nursing question informally, the greatest numbers commented on the fact that there is no shortage in the nursing supply, that registered nurses are generally competent, and that nursing charges are too high, from the point of view of the patient.

A composite picture, built up from these informal comments, might be described as follows:

"The registered nurse is generally competent, often positively heroic. She follows orders, uses good judgment, is usually ethical, is skilled in handling people and has a pleasing personality. But she sometimes steps on medical toes by discussing symptoms and suggesting treatments; she could sometimes be more industrious and show more interest in the patient.

"She often lacks skill in special technics and picks and chooses cases.

"There is no shortage of nurses. The nurse's hours are too long, and her income too low. On the other hand, charges are excessive, for the patient."

The physicians who took part in this symposium on nursing represented many branches of the profession and came from ten representative states.

The Grading Committee has been studying some of the problems implied in these comments from physicians. Its findings show that often, probably, the nurse is not to blame because she "registers against" certain types of illness; or that she lacks skill in special technics. The reports of what the student nurse does in training reveal that important basic services are omitted from her program by many nursing schools, so that, as a graduate nurse, she either registers against such cases or shows herself unable to perform properly the nursing duties involved in them.

An Oklahoma physician wrote: "In this section of the country, most nurses have excellent operating room training, but poor bedside training." A Massachusetts physician wrote, "The nursing problem in obstetrics is very acute." From Illinois came the comment, "Psychiatric postgraduate training of R.N.'s is too rare and there are not enough really well trained psychiatric nurses for private duty."

Many physicians took pains to stress the value of the nurse's understanding of the mental habits of sick people, in writing of

specific examples of nursing care, and her ability to be intelligent and tactful about home situations.

MARTHA DREIBLATT,
(Committee on Grading of
Nursing Schools)

New York City.

Send for your copy of "Who's Your Health Banker." Ready now.

Abdominal Pain

AS ONE grows older in the practice of medicine, the certainty with which pathologic conditions within the abdomen are diagnosed solely on abdominal pain grows less. It is only the fourth-year medical student who can always diagnose with certainty a case of acute appendicitis, or of duodenal ulcer. As he grows older, however, he grows wiser. Conditions within the abdomen assume greater perplexities, as far as making an accurate diagnosis solely on pain is concerned.

He learns that quite often what he diagnosed as an acute appendicitis was a ureteral calculus on the right side. He may also learn that, even at operation, the surgeon will often find a normal appendix and remove it, and not even trouble to explore further. He will close the patient up; but the pain in the right side will persist until further study, by x-rays, will reveal a ureteral stone. A number of cases of ureteral stone on the left side, stimulating acute appendicitis, have been reported in the literature, in which the surgeon did not make further exploration.

Pain in the epigastric region is not always due to stomach or duodenal disease. Very often it is due to a chronic gall-bladder infection or a stone in the gall-bladder. The reverse is also true. I saw a man operated upon preparatory to removing a diseased gall-bladder, who presented all the typical symptoms of acute gall-bladder dis-

ease. When his belly was opened, the surgeon discovered an advanced carcinoma of the stomach with metastasis to the liver. His gall-bladder was perfectly normal. No one in the least suspected a cancer. He was a well-developed, healthy-looking man, without the least evidence of cancer, as far as external examination would show.

A diseased appendix will quite often give symptoms of a duodenal ulcer. A classmate of mine had been suffering with what everyone had diagnosed as a duodenal ulcer, and had even been put on a diet, from which he had obtained some slight relief. Finally he consented to an operation and a chronically inflamed appendix was the only abnormality found. It was removed and he was, from that time on, free from pain. Also a duodenal ulcer may give all the signs and symptoms of an acutely inflamed appendix.

I will report here one case of the many I have seen in which abdominal pains typical of one disease proved to be caused by an entirely different condition.

R. S., negress; age 29 years. She has been suffering for a year from vague intestinal and gastric distress. Three months ago patient began to experience a pain in the right side. This was alternately sharp and dull and intermittent in character, with no relation to food. She has been constipated for the greater part of the year and has vomited when the pain came on. For past two weeks patient has not experienced any distress or vomiting, and has felt rather comfortable.

Appetite fair; bowels constipated and some relief obtained with milk of magnesia; occasional nausea, gas and vomiting; no hematemesis, distress, icterus nor colic. Complete general examination, entirely negative.

Diagnosis: Chronic appendicitis.

This case proved to be a duodenal ulcer, when operated upon. The appendix was entirely normal. A posterior gastroenterostomy was performed. The patient recovered and was thereafter free from all pain.

EDWARD PODOLSKY, M.D.,
Brooklyn, N. Y.

CONSULTATIONS

When a physician calls for a consultant he is in trouble and needs help, not unkind criticism. The consultant may be no more clever nor wiser than the attendant, but he brings new ideas and a fresh point of view. He should always be tactful and considerate.—DR. FRANK H. LAHEY, Boston, Mass.

THE · LEISURE · HOUR

The Doctor



O, man of science, who dost know
And understand, and hast a heart to succor
Those who suffer and have tasted woe,
Who comforts thee when thou art sore distressed
And spent with toil, and burdened with the pain
And sorrow thou hast striven to lift?
Canst thou recall the dying eye
That blesses thee for all that thou hast done,
The mute response of those who feel surcease
From pain, the grateful love of one
Restored to life and health; and do they comfort thee?
Living to serve, to help a world distressed,
To minister to those who bend beneath the rod,
Ah, this is life indeed—the life of Christ—
And makes of thee a Son of God!

NANNIE CARRINGTON DINWIDDIE.

Berkeley, Calif.



Birth of the Month Club

(Public announcement in the *Ohio State University Monthly*, published by the Ohio State University Association, official organization of the graduates and former students.)

THE BIRTH OF THE MONTH CLUB

Announces

Its August Opus

"JACQUELINE EILEEN"

By Eileen and Jack Price

This is the first of this young couple's work and is an interesting study of what can be done when you really try. Unfortunately it was issued privately—there is only one copy in existence. We look for this initial venture to startle the world. It may even set a precedent.

Published August 8. Weight 6 lbs., 6 oz. Plain linen binding. Our price is the best.

GRANT HOSPITAL COMPANY

Publisher and Delivery Service

—*The Amer. Mercury*, Jan. 1931.

Painless Worker

"I am sorry," said the dentist, "but you cannot have an appointment with me this afternoon. I have eighteen cavities to fill." And he picked up his golf-bag and went out.—*Juggler*.

Well, If You Putt It That Way—

Golfer (to members ahead): "Pardon, but would you mind if I played through? I've just heard that my wife has been taken seriously ill."—*Dublin Opinion*.

Unthinkable!

A certain Low Church (Episcopal) bishop once asked one of the High Church clergy about the matter of hearing confessions.

"Now tell me, Father X," said he, "what in the world would people confess to you in the confessional?"

"They might," replied Father X, "confess adultery."

"Not," exclaimed the horrified bishop, "in the Episcopal Church!"—*American Mercury*.

They Have to Know

Old Mose was pretty sick, and after he had groaned and tossed and moaned for two days, Abe asked him if he shouldn't go and get a doctor. Mose agreed that it would be a good thing, but he made one provision—it must be a horse doctor.

"A hoss doctah!" said Abe, puzzled. "Why?"

"Well, Ah've had them other kinda doctahs," explained Mose, "an' they's all right ef yuh knows what is wrong with yuself. Dey asks yuh what is wrong and yuh tells 'em and dey givs yuh somethin' fer it. But ah doan't know what's wrong wif me dis time so I gotta hab hoss doctah. Dose fellers kain't ask dere customers what ails dem—dey just natchally gotta know!"—

Pharmacal Advance.

Definitions

Profanity: A way of escape for the man who runs out of ideas.

An Expert: An ordinary man away from home.

"Ouch!": The class yell of the School of Experience.

Emotion: The spark-plug of action.

Man is the only animal with brains enough to find a cure for the diseases caused by his folly.—ROBERT QUILLEN.

Somebody asked a college professor how science helped business, and he replied, "What would the suspender business amount to without the law of gravitation?"—*Printers' Ink*.

"I have a cold or something in my head."
"A cold, undoubtedly."

My Paw

Paw sez a radio is like a baby
You got one, maybe,
In your flat
An' you love it a lot,
But the one your neighbor's got
Is a damn pesky brat.

B. H.

DIAGNOSTIC · POINTERS

Intestinal Fermentation

Perhaps the most common cause of flatulence due to fermentation is an irritability of the intestinal tract. This disturbed function is usually primary in the colon and secondarily involves the upper tract. Too vigorous use of bran or other diet roughage or excessive cathartics can produce what is commonly called an irritable bowel. From the irritation results, either a too rapid emptying of the small intestine, or the excess cellulose in the diet, carrying starch with it, is dumped prematurely into the colon with only one natural result, that of starch fermentation.—DR. L. D. SNORF, of Chicago, in *Illinois M. J.*, June, 1930.

Postoperative Hemorrhage

Whenever jaundice is present there is always the possibility of concealed hemorrhage. It is noteworthy that, after operations on the common duct, there is a distinct tendency for this complication to occur. The effect of jaundice is essentially chemical, not infectious, and hemorrhage is one of its most frequent manifestations. It is interesting to note that, in approximately 75 percent of the cases that die after operations on the common duct, there is found at autopsy an intraabdominal collection of fluid blood, and in fully half the cases where death takes place, postoperative hemorrhage is an important factor in the production of death.—DR. C. G. HEYD, of New York, in *Am. J. Surgery*, June, 1930.

Send for your copy of "Who's Your Health Banker." Ready now.

Complement Fixation Test in Amebic Infections

"At the present time I do not feel that this test is on the practical basis that a complement fixation test should be before it is relied on alone in the diagnosis of a specific infection. The difficulties inherent

in the preparation of the antigen and in the technic are such that in its present stage of development it could be performed only in laboratories where the services of a serologist and protozoologist are available."—COL. C. F. CRAIG, M.C., U. S. A., in *J.A.M.A.*, July 5, 1930.

Migraine

While migraine has been considered to be due to an intestinal toxemia or auto-intoxication, study in the Cornell Clinic has forced the conclusion that its causality is deep seated in the germ-plasm—that it is an hereditary, constitutional disease and that it seems to be associated closely with a dysfunction of the endocrine glands. The age of onset usually coincides with the establishment of menstruation, in girls, and just before or at the beginning of adolescence, in boys. It ceases or changes its character in women at the menopause and it is rare to see it in men past 50 years of age.—DR. NEIL C. STEVENS, in *New England J. Med.*, Oct. 24, 1929.

Abdominal Injuries

Owing to the great frequency of automobile accidents, particular attention should be given to the signs of injury to the abdominal viscera.

One of the most valuable signs in diagnosis is the state of the pulse. Immediately after any abdominal injury, the rate of the pulse may not matter very much, but the tension is almost always low. In the absence of injury to the abdominal contents, the rate and volume of the pulse rapidly return to normal as the shock passes off. A persistently rapid pulse, of low tension, is very suggestive of intraperitoneal hemorrhage. In most of the other serious intra-abdominal injuries, the tension of the pulse usually improves as the initial shock subsides, but the pulse rate remains rapid or increases.

In the absence of any peritoneal symp-

toms, the most valuable sign is undoubtedly the pulse rate; if it does not fall below 100 beats per minute it is safe to assume that some grave intra-peritoneal lesion is present.—DR. D. M. SUTHERLAND, in *Practitioner*, Lond., June, 1930.

Menstruation After Hysterectomy and Bilateral Oophorectomy

In a woman of 36, castrated by a bilateral oophorectomy and supravaginal hysterectomy, periodic bleeding persisted. From its character this syndrome appeared to be menstrual in nature and presumably maintained by implanted ovarian rests of cells, of a congenital or acquired nature, exercising the function of a misplaced ovary. This abnormally-formed ovarian tissue and part of the endometrium, left within the pelvic stump following amputation of the corpus uteri, assisted in this form of periodic bleeding.—DR. D. DEUTSCHMAN, of New York, in *M. J. & Record*, July 2, 1930.

Chorea

It is now generally accepted that chorea is a rheumatic manifestation or that it and rheumatic fever have a common cause. The pathology of rheumatic fever is still obscure in some respects, but it would seem likely that it is due, at least in part, to some infective agent, probably a diplococcus or streptococcus, and that chorea is caused by the organism or its toxin acting on the brain. The post-mortem changes in the central nervous system are in favor of the view that the manifestations of chorea are due to a meningo-encephalitis, caused by the infective agent or its toxin.—DR. H. M. FLETCHER, in *Practitioner*, Lond., July, 1930.

Migraine

The cause of migraine lies essentially in the emotional life of the individual, with its resultant chain of events, the chief of which perhaps is the gastric status. Attention has always been directed toward the stomach as the cause of sick headaches, and rightly so; however, the fault does not lie in faulty organs, but in the faulty use of normal organs.—DR. R. S. AHRENS, in *Journal-Lancet*, Feb. 15, 1930.

Heart Murmurs

Diastolic murmurs are regularly due to organic deformities of cardiac valves, while systolic murmurs are not so regularly due to organic deformities, but are often due to functional disorders of the heart. A systolic murmur which is not associated with other signs and symptoms of heart disease can usually be considered as functional and lacking in serious cardiopathic significance.—DR. E. E. CORNWALL, Brooklyn, in *Med. Times*, May, 1930.

Froes' Nerve Shock Index

Froes' nerve shock index is valuable in predicting shock under anesthesia and operation. The test is made as follows:

Multiply the patient's systolic pressure by 100 and divide the product by the hemoglobin percent, multiplied by the numerals indicating the hundred-thousands of the erythrocytes. The following type of fraction would be indicative of shock:

$$\frac{170 \times 100}{67 \times 36} = \frac{17,000}{2412} = 7 \text{ plus}$$

The numeral 7 seems to be the limit of safety. With any numeral product above this figure, shock is very apt to occur.—DR. E. KLAUS, of Cleveland, in *Anesth. & Analg.*, May-June, 1930.

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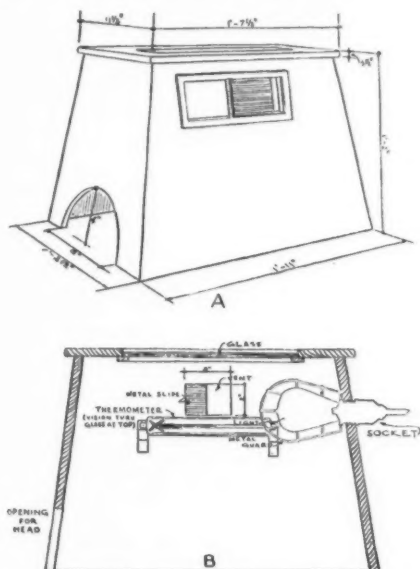
Psychology and Hysteria

THE group of disorders termed hysterical may be subdivided psychologically into smaller groups. In all of them, both certain preexistent tendencies (psychologic types) and certain acquired psychic mechanisms (psychisms) may play a role, sometimes one predominating, sometimes the other. Hysterical symptoms may arise in persons of any type when external circumstances become extremely difficult. They may be elicited with less provocation in the case of primitive or adolescent persons. In people of the extroverted types and in those whose predominating function is feeling, hysterical manifestations tend to develop more lasting and elaborate forms than in people of other types.—DR. J. H. VAN DER HOOP, Amsterdam, Holland, in *Arch. Neurol. & Psychiat.*, Aug., 1930.

Current · Medical · Literature

An Inexpensive Incubator for Premature Infants

An inexpensive incubator for premature infants, based on one devised by Professor E. Nobel, of Vienna, and used for the past five years in the Presbyterian Hospital of Chicago, is described by Dr. A. H. Parmelee, of Oak Park, Ill., in *Am. J. Dis. Child.*, Jan., 1931.



A.—Elevation of Incubator; B.—Longitudinal Section.

The incubator is made of light wood. An arch 4 inches high by 8 inches wide is cut in one end to permit the infant's head to lie outside the box. Heat is furnished by a 40-watt, carbon-filament incandescent lamp at the opposite end from the arch. This lamp should be equipped with a metal wire guard to prevent blankets or clothing from coming in contact with the lamp bulb. An ordinary room thermometer is attached to one side wall with wooden or metal braces, in such a manner as to be easily visible through the window in the top of the box. A vent measuring 3 by 2 inches is made in each side wall just above the level of the thermometer; this is opened or closed by means of a metal slide to lower or raise the temperature. After experience in the use of an individual incubator box, the temperature can be

kept at almost any point between 90° and 110F., as desired.

The incubator box is placed on an ordinary crib or bed mattress. The infant lies on the mattress with its head protruding from the arched opening. The infant's body is naked except for a gauze diaper. If the mattress is not flat and even, a rolled-up blanket may be placed around the bottom of the box to prevent cool air from entering.

Any good carpenter or cabinet-maker can make these incubators at a slight expense. They have no mechanical devices which can get out of order.

Diet Effects in Protecting Liver Against Arsphenamine

It has been clinically observed that patients receiving arsphenamine treatment will occasionally become jaundiced, but the reasons for this are not quite clear.

In *Bull. Johns Hopk. Hosp.*, March, 1931, Dr. E. B. Craven, of Baltimore, finds, as the result of animal experiments, that high-fat and high-protein diets provide the maximum protection against the liver injury caused by arsphenamine. Of the two diets, the first is the more efficacious.

High-carbohydrate diets afford maximum susceptibility to the liver injury caused by arsphenamine; also starvation is important as a predisposing factor toward liver injury from this cause.

Cystine, added to the diet or given intravenously, does not afford protection in the case of high-carbohydrate diets used during arsphenamine treatment.

A New Technic in Adenoidectomy

A new technic of adenoidectomy is described by Dr. M. C. Findley, of Salem, Ore., in *North-west Med.*, Jan., 1931.

In this technic, any fenestrated curette may be used. After the adenoid is thrust through the fenestrum of the instrument, the technic differs widely from the direct downward sweep which, according to textbooks, is customarily used. The author contends that it is impossible, with a straight downward motion of the blade, either to follow accurately the base of the adenoid mass or to sever it with a clean cut.

The author found that it was quite possible to impart to the blade of the adenoid curette a definite lateral motion and with this the adenoid could be severed from its base cleanly and with the use of very little pressure, thereby permitting greatly increased delicacy of touch with the instrument and allowing the operator to guide it with accuracy along anatomic lines.

To execute this movement, the handle of the

curette is grasped as though it were to be used as a pen, this being just opposite to the position ordinarily assumed. The instrument is inserted into the nasopharynx and is carried forward until the front of the blade strikes the posterior edge of the septum. The fitting of the curette over the adenoid mass and against the posterior pharyngeal wall is of great importance, and may be done with great exactitude by the sense of touch. The lateral movement of the blade is then obtained by a rhythmic rotary motion of the thumb, fingers and wrist, and if, at the same time, the curette is drawn downward, it will be found that the cut is made almost without effort and with some practice a very accurate knowledge of the exact position of the blade at all times is obtained by the sense of touch. The instrument will cut cleanly through the inferior edge of the adenoid mass without danger of stripping the mucous membrane from the posterior wall of the pharynx.

Treatment of Peptic Ulcer with Gastric Mucin

Experimental animal work by Dr. S. J. Fogelson, of Chicago, as described in *J.A.M.A.*, Feb. 28, 1931, has shown that gastric mucin has a high acid-combining power. Two ounces of mucin placed in the stomach of a dog was more than sufficient to combine with the acid secreted in response to the injection of 1 mg. of histamine.

When half an ounce of mucin was mixed with a pound of meat and fed to a dog, free acid did not appear in the dog's stomach through the period of observation of from 5 to 7 hours.

Complete relief from subjective symptoms, for varying periods of from 2 to 5 months, was afforded to 12 patients with classic histories and roentgen appearances of peptic ulcer, by feeding them about an ounce of hog's gastric mucin three times a day, with their meals, in addition to about 30 grains of mucin in tablet form, hourly throughout the day.

Three New Diagnostic Signs in Appendicitis

While the signs herein described will usually be found to be of confirmatory value in acute appendicitis, their chief objective is to employ them in suspected involvement of a chronically diseased appendix.

1.—Instruct the patient to jump up and down ten times in rapid succession. Let the examiner, standing to the right of the patient, place the palm of his hand with the small thenar eminence resting above Poupart's ligament, and press gently inward and upward. This will often elicit tenderness missed on palpating the abdomen in the recumbent posture.

2.—The patient bends forward ten times with arms upraised. On the completion of this exercise pressure is made over the appendix area, while the patient's arms are still extended; this will often reveal a tender zone.

3.—The obese patient should be told to lie in the recumbent posture and grasp the sheet which is attached to the foot of the bed, or in

lieu thereof, the examiner's hand. He is then instructed to raise himself quickly ten times. On resuming the flattened position in bed (without pillow support) he is told to cough. Often without the examiner's palpating the appendix area, the patient will announce a distressing feeling over the seat of this organ.—Dr. M. D. BLOOMFIELD, of Philadelphia, in *M. J. & Record*, Jan. 21, 1931.

Treatment of Fractured Jaw

In *J. Michigan St. M. S.*, Dec., 1930, G. R. Maitland, D.D.S., points to two outstanding fundamentals necessary for good results in the reduction of fractured jaws, namely: (a) Normal or as nearly a normal occlusion as possible when teeth are present, which necessitates accurate approximation of the fragments; (b) Immobilization of the parts fractured.

Dr. Maitland says that probably 90 percent of jaw fractures where teeth are present can be reduced with copper-bronze wire (24 gauge). Using wire in this way is called interdental ligation. The wires are placed between the necks of the teeth and are twisted on themselves. The wires from the upper teeth are criss-crossed to those on the lower teeth and the two twisted together. Without a doubt this method of treatment is the most satisfactory when the teeth are present, and in dealing with compound multiple fractures. It is always advisable to x-ray fragments to see that you have continuity of parts after the fracture is reduced.

The Use of Thymophysin in Pregnancy

Thymophysin was introduced as an oxytocic in 1925 and great claims have been made for it.

In *Am. J. Obst. & Gynec.*, Dec., 1930, Dr. M. P. Rucker, of Richmond, Va., reports having used it in 4 cases of pregnancy. He states that where any response was elicited at all it was that of an incomplete tetanus lasting from 16 to 24 minutes. The character of the contractions observed is considered by the author as dangerous for mother and child. He suggests that very great care should be exercised in the use of this drug as the manufacturers' claims are not fully borne out.

Manipulative Obstetrics

In *Northwest Med.*, Oct. 1930, Dr. Jos. H. Sayer, of Seattle, advocates active manipulative obstetrics. He considers that the disgraceful rate of obstetric mortality and morbidity shown by statistics demands a radical change in the attitude of the profession. Obstetrics must be recognized as a major branch of surgery, and only competent surgeons should be allowed to conduct deliveries.

Hospitals must maintain modern obstetric departments with complete equipment and thoroughly trained nurses.

All the aids of modern methods of anesthesia and surgical manipulations must be brought to both mother and child, and, although pregnancy is a natural condition, we should not be satisfied, in conducting delivery, to allow "na-

ture to take its course." Surgical judgment demands active rather than passive methods.

Manipulative delivery under anesthesia has robbed childbirth of its terror and lessened greatly the dangers to both mother and child.

Mothers return to normal more quickly, and children are born in better condition, if the second stage is shortened and rendered painless.

Manipulative obstetrics is being practiced more and more by our leading obstetricians and the profession in general should perfect its technique and adopt their methods.

Dysmenorrhea of Endocrine Origin

The vast proportion of cases of dysmenorrhea associated with interstitial thyrotoxicosis are amenable to medical therapeutics. In *Am. J. Obstet. & Gynec.*, Nov. 1930, Dr. A. Wendel, of Chicago, gives the following more or less standardized formula used by him:

R Potassii iodidi	8 Gm.	3ij
Fldext. hyocyami	12 Gm.	3iii
Liq. potassii arsenitis.....	12 Gm.	3iii
Sodii bromidi	48 Gm.	3iss
Rubelixir, q.s. ad.....	240 or fl. 3viii	

M. Sig.: Take one teaspoonful in water three times a day after meals.

It takes any time from 6 to 18 months to effect a cure, but the daily dosage may be reduced at the physician's discretion.

Oxygen Inhalations in Postoperative Sepsis and Peritonitis

In *M. J. & Record*, Dec. 17, 1930, Dr. R. A. Leonardo, of Rochester, N. Y., on the basis of two reported cases of postoperative sepsis in which exceptionally favorable results were obtained, expresses the opinion that oxygen therapy distinctly increases the patient's resistance, by improving the vitality of the cells themselves and by furnishing them with the energy needed.

The author believes that the benefit due to oxygen inhalations would be obtained in postoperative cases, even when marked by the absence (rather than the presence) of anoxemia.

The oxygen inhalations were given, one hour on and one hour off.

Preliminaries to Blood Transfusions

Dr. C. E. Hamner, of Shreveport, La., in *Tri-State M. J.*, Dec., 1930, considers that when there are to be several blood transfusions, and both the recipient and donor have been typed, the donor's blood should always be re-typed with the recipient's before performing the second or third or more transfusions. It is recognized that a transfusion may and often does change the type of the recipient.

When it is necessary to make an immediate transfusion, a microscopic examination can be made by what has been termed the "criss-cross" method.

In the criss-cross method, five drops of blood are taken from the ear or the tip of the finger and allowed to fall into a test tube containing 1.0 cc. of physiologic salt solution. This must be taken from both donor and recipient.

With a Wright capillary tube, enough blood is taken from this same puncture to make at least two drops of serum. This must also be taken from both donor and recipient.

All of this blood is centrifuged. The supernatant fluid in the normal salt solution is removed, and the cells are washed at least three times. The serum is removed from the blood in the Wright tubes and placed on a watch crystal or in the cavity of a hanging drop slide. Both of these should have previously been cleaned with alcohol and passed through flame, as all slides used in this test must be, to remove all possibility of dirt or foreign substance. Both the glass microscope slides and the cover slips to be used must be ringed with oil.

First.—Place one platinum loop of the donor's red-cell emulsion and two loops of the recipient's serum on a cover slip. Press an oil ringed slide over it.

Second.—Place one platinum loop of the recipient's red-cell emulsion and two loops of the donor's serum on a cover slip.

These slides should be examined under the microscope for both hemolysis and agglutination. If neither of these occurs in an hour, the transfusion is considered safe.

The Intra-Nasal Care of Hay-Fever Cases

In the therapy of hay fever and hay asthma there are certain cases of failure following the use of pollen extracts, not only in the immediate relief sought but also in the recurrence of symptoms the next or second year.

To correct the nasal pathology of such cases Dr. Edward E. Edmondson made a study of the nasal condition in these cases and, after a research of eight years, reported, in *Iowa Quarterly Bul.*, Spring, 1931, 200 cases completely recovered by the use of an antiseptic-astringent aqueous solution of aluminum and zinc sulphates with silver nitrate, equal parts, 5 grains to the ounce. This strength of solution is increased as the tolerance of the patient is established, but not more than 20 grains of each to the ounce is recommended.

In his paper Dr. Edmondson reports twelve cases in detail, to illustrate the variety of nasal conditions in which this therapy is applicable. The nasal cavity must be thoroughly anesthetized and the solution should be applied to the entire surface of the nasal membranes. The solutions may be applied with nasal applicator, spray or medicine dropper. 30 to 50 such applications usually effect a complete and lasting recovery.

Obesity

According to Dr. D. N. Kremer, of Philadelphia, in *Ann. Intern. Med.*, Feb., 1931, in cases of exogenous obesity an adherence to a prescribed diet will bring about an amelioration in symptoms, a definite lowering of blood pressure, if high, and a general improvement in the patient's physical condition.

The diet found most satisfactory in the author's series of cases was one approximately 1400 calories, which allows a gradual loss of

weight. The protein was calculated to be about 1.3 Gm. per kilo of body weight. This insured the patients against using their own protein, consequently little or no weakness was felt during the period of dieting. The carbohydrate approximated 200 Gm. and with this amount the danger of acidosis was lessened; it was mostly given in the form of vegetables. No free fat was given. Sufficient vitamins and minerals were given to prevent any possibility of malnutrition developing.

With this diet weight was not lost too rapidly nor did it interfere with the patient's routine of life. The loss of weight varied from 1 to 3 pounds per week, depending upon the patient's cooperation.

Moderate doses of thyroid preparations, plus diet, will cause an extra loss of weight, averaging one pound a week, and can be continued for four to six weeks before evidence of thyroid reaction occurs. Thyroid therapy without diet fails to cause an appreciable loss of weight.

Theocalcin in Precordial Pain

In a paper appearing in the *Cincinnati J. of M.*, March, 1931, Dr. J. E. Benjamin reports on 30 cases in the heart clinics in the out-patient department of the General Hospital, and on 14 private patients. The observations cover three to four months.

Of the first group, which was difficult to control and not regular in attendance, two-thirds of the patients suffering with precordial pain, experienced relief while taking Theocalcin. A high blood pressure was reduced in some cases during medication, but returned to previous levels after discontinuing the treatment. Theocalcin was well borne, in doses of 30 to 40 grains (2.0 to 2.65 Gm.) a day.

In the 14 cases in private practice, all under strict control, and most of them placed on a certain degree of rest, precordial pain (anginal and otherwise) was decidedly benefited by Theocalcin. Occasionally large doses were required, up to 30 to 50 grains (2.0 to 3.32 Gm.) a day. The relief from pain was noticed for an appreciable time after discontinuing medication, and can apparently be maintained by small daily doses of $7\frac{1}{2}$ to 15 grains (0.5 to 1.0 Gm.). Practically every case was benefited and no idiosyncrasy was noted.

All these cases are carefully charted and a long bibliography is included in the report.

Respiratory Complications and the Surgical Patient

Based on the study of the complications developed in 3,433 patients on a general surgical service, in *Surg. Gynec. & Obstet.*, Dec., 1930, Drs. H. L. Foss and J. H. Kupp, of Danville, Pa., find that 60 patients (1.7 percent) developed pulmonary complications and of these 25 (0.72 percent) died.

The authors believe that their study further strengthens the theory that embolism plays the chief part in the production of most postoperative pulmonary complications. Infarctions (minor emboli) are far more common than has been

generally supposed. Aspiration plays but a minor role in the production of pulmonary complications.

Pulmonary complications are infinitely less common following operations on the upper respiratory tract than following operations on the abdomen and pelvis.

Irritation by the anesthetic or the aspiration of foreign substances during inhalation anesthesia probably plays a part in the production of postoperative bronchitis and pneumonia. However, the fact that these complications, with great frequency, follow spinal and even local infiltration anesthesia suggests that other factors play an equally important part.

Pulmonary complications have their highest incidence in the winter months and are far more common in patients of advanced years.

In the light of our present knowledge, treatment of these conditions should consist of: (1) hyperventilation during and after operation, with carbon dioxide and oxygen; (2) change in the position of the patient every 6 hours, after operation; (3) curtailment of sedatives after operation, especially those which depress the cough reflex, and, when collapse occurs, the bronchoscopic removal of the mucus or, whenever the other complications considered are present, the use of our newest and most valuable aid, the oxygen tent.

The Treatment of Secondary Anemia

Experimental clinical investigation, by Drs. J. H. Powers and W. P. Murphy, of Boston, as given in *J.A.M.A.*, Feb. 14, 1931, of patients with secondary anemia due to chronic small hemorrhages or to chronic chlorosis, have shown that liver extract is of no value in the treatment of these types of secondary anemia. But such patients respond very favorably to treatment with iron, in the form of ferrous carbonate. They respond equally well when whole liver is given, in conjunction with iron. The effect of iron or of whole liver is not increased by the simultaneous administration of liver extract.

The Aching Ear

If the external auditory canal walls are reddened and the opening somewhat narrowed, and especially if the membrana tympani is nearly normal in appearance and there is no history of cold, we have an external otitis. Treatment here consists of packing the canal lightly but firmly with a gauze wick saturated with acetate of lead solution, acetic ether, or compound tincture of benzoin. This renders the canal more immobile, stopping most of the pain from the action of the jaws; it is antiseptic to the skin and it will aid furuncles to point the way to be opened. After the inflammation has been localized, then "ear drops" may help, but should be used on cotton pledgets rather than dropped in the ear, where they are apt to carry the infection to the otherwise healthy drum head. Also, with cocaine-menthol-camphor solution against the skin of the canal for 15 to 30 minutes, enough anesthesia will usually be present to permit the incision of the furuncles.

If a membrana tympani is bulging and the

canal is not severely reddened, early paracentesis, the opening being low and posterior and not too small, will alleviate and possibly cure the otitis.—DR. F. MCK. RUBY, of Hibbing, Minn., in *Am. Med.*, Nov., 1930.

Blood Transfusion in Infectious Diseases

Transfusion of blood, as a therapeutic agent in acute infectious diseases, has been studied in 100 cases by Dr. J. F. Landon, of New York City, and the results are given in *Am. J. M. Sc.*, Oct., 1930.

In 27 cases of diphtheria (7 with myocarditis), transfusion neither was of aid in preventing injury to the myocardium nor successful in saving the lives of those patients in whom myocarditis was present. Transfusion is also contraindicated in laryngeal diphtheria, particularly when bronchopneumonia is present.

Transfusions had no effect whatever on the course of acute toxic scarlatinas. Of 25 cases transfused 9 patients died.

Transfusion in measles appears to be of definite value in the cases complicated by bronchopneumonia. It is also of value in the pre- and postoperative care of mastoiditis, sinus thrombosis and empyema, especially when these are complications of scarlet fever or measles.

As a general tonic in protracted cases, in which anemia and malnutrition develop, transfusion is strongly indicated.

Dental Prophylaxis in Childhood

Periodic health examinations should begin in childhood, in the pre-school and school age, when oral hygiene and dental care can be developed so that it becomes part of the daily life's routine. The acquisition of the care of the mouth habit in childhood, and of visiting the dentist periodically, will carry on throughout life.

The dentist should cultivate a gentle, kindly, fatherly approach to the dental child subject, surrounding him environmentally with conditions which do not engender suspicion, fear, hate, disrespect, lack of faith or mistrust. A kind word, an evident interest in the child, gentle encouragement if necessary and explanation of the ill effects of an unclean mouth, with the benefits of treatment upon the health and well-being, should be the fundamentals in which lie the hope of parental and child cooperation.—DR. J. SOBEL, of New York City, in *Dental Outlook*, Jan., 1931.

Cancer

When special cancer hospitals are established throughout the country, clinicians will realize that many of the cases of cancer which are apparently favorable at the time of examination will be found to present extensive growths entirely unsuspected. They will learn not to treat carcinoma of the cervix with large quantities of radium when supraclavicular invasion has already occurred. They will learn that a good surgeon does not operate on a carcinoma

of the stomach when a Virchow's node exists above the clavicle; that he does not amputate a leg for sarcoma until the lung and bony system have been shown to be free from metastases; that a competent physician does not treat a child for "rheumatism" until a roentgenogram has demonstrated the absence of a bone sarcoma; nor administer medicine to cure "sciatica" in a woman who has had a breast amputated. They will learn the wide range of palliation which can be accomplished by irradiation, either alone or combined with surgery; but they will see that palliation, however valuable, is of but short duration in many instances.

It is useless to educate the public about cancer unless the profession can meet the demands so stimulated, and the profession cannot do so unless the facilities, both for undergraduate and postgraduate instruction, are developed far beyond their present status.—DR. F. C. WOOD, of New York, in *J.A.M.A.*, Oct. 18, 1930.

Treatment of Hygroma with Incitamin

In 22 cases of bursitis, the hygroma disappeared as a rule after a single injection of 1 to 2 cc. of Incitamin preceded by puncture and withdrawal of the contents of the hygroma. Only a few cases required repeated injections.

Incitamin is a Danish product, containing phenol, serum, saliva and pancreatic extract, first introduced by Fischer in 1920 for the treatment of wounds, but which has since then been much improved.

This injection method has also been used successfully for the treatment of ganglionic cysts and for hydrocele.—DRS. S. FELDING and J. JENSEN, in *Ugeskrift f. Laeger*, April 10, 1930.

Endocrine Factors in Migraine

In *M. J. & Record*, Nov. 19, 1930, Dr. E. F. Hartung expresses the opinion that migraine is a manifestation of pituitary hypofunction that is due to the sudden enlargement of the gland under conditions calling for its increased activity.

The author has demonstrated clinically that an attack of migraine may occasionally be aborted by the hypodermic administration of posterior pituitary extract. This result was at times spectacular.

The treatment has been carried out in 50 cases. Hypodermic injections of anterior and posterior pituitary extracts or of whole gland extract, have been given twice a week for the first month and thereafter once a week for as long a time as seemed necessary. Oral administration was also employed, making use of the whole powdered gland, the dose being from 1/20 to 1/2 gr. (3 to 30 mgm.). Larger doses occasionally caused headache.

Concomitant hygienic treatment is given. A diet low in carbohydrates is insisted upon, refractive errors are corrected, and plenty of rest and careful living are prescribed.

Most of the patients so treated have been followed from three to four years. A critical ex-

amination shows that there have been but three complete failures; 12 out of the 50 patients treated have been markedly improved, with practically complete freedom from attacks; 35 were greatly benefited.

Physiologic Effects of Amytal

It has been alleged that Amytal, administered in amounts sufficient to produce surgical anesthesia, has little or no influence on the blood sugar.

From animal experiments and clinical observations, I. M. D. Olmsted, Ph.D. and G. Giragossintz, M.A., of Oakland, Calif., report in *J. Lab. & Clin. Med.*, Jan., 1931, that:

1.—Dogs fed on a diet rich in carbohydrate show a slight rise in blood sugar after amytal. Dogs on a diet of lean meat only showed no such rise.

2.—Amytal not only prevents hyperglycemia when injected simultaneously with morphine, but also checks glycogenolysis if injected later than the morphine.

3.—Amytal prevents the rise in blood sugar which would normally follow two minutes' asphyxia, but does not prevent it in the very late stages of asphyxia.

4.—In human patients, the blood pressure fell after amytal and the heart rate increased. The blood pressure in decerebrate cats invariably fell after amytal.

5.—The effect of splanchnic stimulation in cats under amytal appeared normal.

6.—Asphyxia failed to cause the typical rise in blood pressure in cats under amytal.

7.—The urea and nonprotein nitrogen of the blood increase to a greater degree after amytal than in individuals with both kidneys removed. This is probably due to depressed circulation.

8.—Amytal profoundly affects the respiratory center.

9.—Amytal prevents gastric secretion.

Cod-Liver Oil Versus Viosterol

In *Drug Markets*, Feb., 1931, E. O. Prather, Martha Nelson and A. Richard Bliss, of the Laboratories of Pharmacology, University of Tennessee, publish the results of a study of the comparative values of cod-liver oil and viosterol. The tests were made on groups of rats.

From the experimental investigations it is concluded that when animals are fed a purified diet, adequate in proteins, inorganic salts, calories and vitamin B, they grow well for a short time; then the weight becomes stationary or falls off rapidly and xerophthalmia develops. The upper respiratory tract becomes inflamed; the liver and spleen become discolored, shrunken and infiltrated with fat; the kidneys become sand-colored; the intestines are found to be thin-walled and filled with gas. In some cases the stomach and the entire intestinal tract are badly distended. There is no visible intraperitoneal fat present. The intestines vary in color from dull-brown to a degree of inflammation which is almost red. The amount of calcium deposited in the bones is very small.

The addition of viosterol to a diet like the foregoing increases the calcification of the bones,

but does not prevent or cure the xerophthalmia nor increase the growth of the animal. Instead, the xerophthalmia appears to be aggravated, although it does not develop earlier.

The condition of the upper respiratory tract is not improved; the intestines, kidneys, spleen and liver are found to be fully as bad as, if not worse than, the condition found when no viosterol is given.

The addition of cod-liver oil to the original diet results in excellent growth of the animals, a better calcification of the bones, increased deposition of body fat, normal respiratory tracts and the liver, kidneys, spleen and the intestines are found to be normal.

Southey's Tubes in Obstinate Edema

There are strong objections to most of the methods now in use for treating obstinate edema, especially in the lower extremities. In *J.A.M.A.*, Nov. 15, 1930, Drs. E. F. Bland and P. D. White, of Boston, call attention to the value of Southey's tubes (first introduced in 1877) for this purpose.

The apparatus is simple in design and consists of a small metal trocar and cannula, the latter containing several lateral perforations. In the handle of the trocar is a compartment in which additional cannulas are carried.

The skin at the sites selected for insertion, usually the outer and inner aspects of the lower parts of the legs or dorsum of foot, is cleaned aseptically, a wheal made with procaine hydrochloride and a small amount of sterile ointment applied to prevent irritation. The trocar and cannula are inserted deeply into the swollen part; the cuff of the cannula is held firmly with a clamp while the trocar is withdrawn; and a small rubber tube attached, led off to a suitable receptacle beneath the bed. As many tubes may be used as seem desirable, but the author has found that two in each leg usually suffice, left in place from one to several days.

The author has used this method in 8 cases of extensive edema, mostly the result of congestive heart failure. In 2 the results were strikingly beneficial (9 to 16 liters of fluid removed, respectively, within a few days); in 3 cases there was moderate relief; in 1 case slight improvement; and in the other 2 cases, no beneficial effects were noted.

Gastric Tissue Feeding in Pernicious Anemia

Much work has been done in the feeding of various organic tissues and extracts for the treatment of the anemias.

In *J.A.M.A.*, Feb. 14, 1931, Dr. H. M. Conner, of Rochester, Minn., reports that 60 patients who have pernicious anemia have been treated with gastric tissue of swine or with tripe. Two of those were given gastric tissue of swine after virtual failure with tripe, and tripe constituted the sole form of gastric tissue given to two. Forty-six (46) of the patients have been carefully studied, under observation in a hospital. Raw and dried preparations have given approximately equivalent results.

The mucosa, the remainder of the stomach

after the mucosa was removed, and whole gastric wall were used separately, and each proved effective in the cases treated. The presence of muscle meat was not required to obtain results in the two cases treated with mucosa without muscular coat or other muscle meat. Fundus and pylorus, each used separately, produced satisfactory, if not equal, results. The effects on the reticulated erythrocytes, mature erythrocytes, hemoglobin and leukocytes are similar to and apparently equivalent to those obtained by feeding liver or liver extract. The effects on the general and neurologic symptoms are apparently about the same as those obtained with liver or its extract.

The results with 240 Gm. of raw whole stomach make it appear that this is the average curative dose. Of desiccated hog stomach, the curative dose usually was from 20 to 40 Gm. About half the curative dose is required for a maintenance dose.

Simple, Rapid Diagnosis of Pregnancy

In *Am. J. Obst. & Gynec.*, March, 1931, Drs. M. H. Friedman and M. E. Lapham, of Philadelphia, describe a simplified rapid procedure for the laboratory diagnosis of early pregnancy.

The method depends upon the known fact that the ovaries of an unmated female rabbit contain neither corpora lutea nor corpora hemorrhagica and that such an ovary responds rapidly, biologically, to the injection of urine from a pregnant woman.

The urine is injected intravenously thrice daily for two days in 4 cc. doses. Forty-eight hours after the first injection the rabbit is killed. If the ovaries contain either fresh corpora lutea or large bulging corpora hemorrhagica the reaction is positive and the woman who furnished the sample of urine is presumably pregnant.

The results obtained with this procedure have proved to be correct in each of 92 cases in which it was tried and for which there are complete records.

The test is much simpler than the Aschheim-Zondek test.

Carbolfuchsin Paint in Epidermophytosis

In *J. Missouri St. M. S.*, Sept., 1930, Dr. N. Tobias describes the method of preparing Castellani's carbolfuchsin paint, which is excellent in the treatment of fungoid infections of the skin and many eczematous conditions.

The solution is made as follows: To 10 cc. of a saturated alcoholic solution of basic fuchsin, are added 100 cc. of 5-percent aqueous carbolic acid. This mixture is then filtered and 1 Gm. of boric acid added. After two hours, 5 cc. of acetone are added. The mixture is permitted to stand for two more hours and then 10 Gm. of resorcin are added. The paint is then put in a dark-colored bottle having a glass stopper. It is advisable not to prepare a large quantity at one time as, after standing for more than a month, the solution loses its bright-red color and tends to lose its body and thin out. To remove the intense stain, a 10-percent solution of sodium bisulphite should be used.

The paint may be diluted with equal parts of water in treating acute cases, but should be used full strength in chronic types. It may be used daily or every other day, depending upon the severity of the disease. Before applying, it is important to remove all ointments used previously, as well as crusts and debris, by sponging the affected areas with ether, benzine, or carbon tetrachloride.

Calcium Therapy in Paroxysmal Tachycardia

In *Ann. Intern. Med.*, Jan., 1931, Drs. Jos. B. Wolfe and S. Ballet, of Philadelphia, report 3 cases of simple tachycardia in which the paroxysms were immediately terminated by the use of calcium. The authors believe that this is a therapeutic measure which, while not successful in every instance, is well worth trying where other methods have failed and where the length of the attack is dangerously prolonged.

In these cases the calcium was given intravenously, in the form of afeinil or calcium gluconate. The remedy must be injected slowly, 5 minutes being required to inject 20 cc. Two patients received follow-up treatment in the form of calcium lactate, grains 20, (1.30 Gr.) t.i.d.

Chronic Indigestion and Gastritis

The newer knowledge obtained through surgery has resulted in quite unexpected information as to the cause of chronic indigestion. The large majority of stomachs, though normal in their external appearance, have shown obvious macroscopic and microscopic evidence of gastritis. The suspicion that gastritis should not be regarded as an old-fashioned diagnosis, for which there was no scientific basis, has been confirmed.

Chronic gastritis should be treated by removing any exciting causes and, if achlorhydria is discovered, a normal secretion of gastric juice can generally be restored by lavage every morning with dilute hydrogen peroxide (1 dr. to the pint), until no more mucus is present. In cases in which there is no mucus from the beginning or in which the acid secretion does not return after lavage, large doses of dilute hydrochloric acid (up to 2 dr. in half a pint of orangeade) should be given as a beverage with each meal.—*DR. A. F. HURST, in Practitioner, Lond., Jan., 1931.*

Metatarsal Injuries

For all metatarsal fractures, immobilize the foot in a plaster-of-Paris cast for no less than three weeks. Use the foot for full weight-bearing guardedly, beginning with the end of the third week in single and simple metatarsal fractures. Use the foot for full weight-bearing guardedly, after the fourth week in complicated fractures; however, only after immobilization in plaster cast for four weeks has been carried out, following completion of treatment of the compound fractures. Upon removal of the fixation cast, begin massage and movements promptly, with hot baths or bakings of the foot each day.

Crushed metatarsal fractures, although they may frequently demand amputation, may be, in instances of perseverance, spared for subsequent reconstruction work. Thus, there is afforded a better means for establishing a useful supporting extremity. A deformed foot is better than no foot, and reconstruction work affords the opportunity toward making an unsatisfactory initial piece of conservative surgery more satisfactory.—DR. A. J. BUKA, of Pittsburgh, in *Am. J. Surg.*, July, 1930.

Experimental Rheumatoid Inflammation and Allergy

From experimental work on rabbits; i.e., inoculating them with streptococci obtained from the blood of patients with rheumatism, it appears evident that the polyblastic type of reaction, which is characteristic of the lesions in human rheumatic cases, does not depend primarily upon a hypersensitive state when produced experimentally. This reaction may be produced with larger doses of the streptococci in both normal and immune animals. However, doses which in normal or immune animals have no noticeable effect or produce only small, firm polyblastic nodules, will, in hypersensitive animals, stimulate the production of definite nodules, many of which are extreme enough to be definite abscesses. The relationship between allergy and the polyblastic type of reaction, as seen in human rheumatic and experimental streptococcal lesions, appears to be, not a qualitative, but a quantitative one. This quantitative relationship may help to explain the pathogenesis of human rheumatic lesions in many cases.—DR. B. J. CLAWSON, of Minneapolis, in *Ann. Intern. Med.*, November, 1930.

Latent Syphilis

Modern treatment with arsenobenzene derivatives, according to Dr. G. Evans in *Practitioner*, Feb., 1931, does little more than convert active into latent syphilis, especially as patients too often cease attending clinics when the external signs have disappeared. The results are disastrous. These persons, themselves carriers of infection but apparently immune from any fresh infection, return to their former habits. When we add to this three other considerations: (1) that primary sores in the female usually escape detection; (2) that this sex enjoys a special degree of immunity during the child-bearing period; and (3) that there is evidence to show that syphilis contracted from a person in the tertiary stage shows chronic proliferating lesions, rather than the acute chancre or exanthem; it becomes increasingly clear that atypical forms are to be expected and that their numbers will be greater than the typical.

Among the manifestations arising from latent syphilis, the author places gastric symptoms, abdominal lesions, hyperthyroidism, chronic headache and organic disease of the central nervous system.

Leukocyte Reaction to Nonspecific Protein Injections

In *J. Lab. & Clin. Med.*, Jan., 1931, Dr. R. L. Larsen and A. A. Jenson, of Evanston, Ill., as the result of clinical observations, report that:

A definite, persistent and progressive increase in leukocytes was obtained in four individuals who were given six intramuscular injections of Proteolac, a nonspecific protein preparation.* An evanescent increase was also observed in twelve individuals who were given only one injection.

The question is raised as to whether a general "shock" reaction is essential to success with this form of therapy. If the leukocytic increase is a measure of resistance to infection, such a reaction is not essential, because the increase can be obtained without a symptomatic "shock."

In this small series, the leukocytic reaction (percentage increase) was greater in the subjects receiving small doses intradermally and intramuscularly than in those receiving larger doses intramuscularly, and suggests that the size of the dose may not be an important factor.

Anesthesia in Obstetrics

In the present state of medical science, ether probably occupies the place of greatest adaptability, if not that of greatest safety. While its bulk is greater than chloroform, its toxicity is much less, and, in the absence of existing upper respiratory infections (which should make its use contraindicated), its sequelae are few. For the practitioner in the home, its limits of safety are such that it can be given by an inexperienced person under the direction of the accoucheur, and yet assure the patient of mitigation of the pain and relaxation of the perineal musculature for the delivery. If the administration of ether with the pains has been started early enough, only a little increase is necessary while the head is being delivered, to secure complete anesthesia. The expense is certainly small. Probably ether, today, enjoys the most widespread popularity of all types of anesthesia at our command.—DR. H. A. FURLONG, in *J. Michigan S. M. S.*, Aug., 1930.

Gonococcic Vulvovaginitis

In *Vener. Dis. Information*, Sept. 20, 1930, Drs. R. D. Herrold, S. J. Hoffman and M. L. Blatt, of the Public Health Service, state that the results of treatment of gonococcic vulvovaginitis with antiseptics were compared, by using vaginal injections in several cases. The best results were obtained by using 1:1,000 neutral acriflavine in 7-percent gelatin, during the acute stage, and replacing this mixture by one-half percent silver nitrate in 7-percent gelatin, in chronic cases after the acute clinical symptoms had subsided. This was followed by 1-percent silver nitrate in 10-percent gelatin, in very persistent infections.

*Different groups were given 1 cc. and 5 cc. intramuscularly, respectively, for the first dose, and 5 cc. and 10 cc. respectively for subsequent doses.

NEW · BOOKS

When the universe no longer holds any amusement for a man it is time for him to die.—PROF. ALBERT A. MICHELSON.

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EVERYDAY PRACTICE SERIES. Edited by Harlow Brooks, M.D. Philadelphia and London: J. B. Lippincott Company. Price \$5.00 per volume.

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Suffice it to say that the volumes comprising the series are written from the ground up (no rehashing), by experienced clinicians having ample opportunity of studying and dealing with the subjects treated and of embodying the latest and most practical methods of treatment within the scope of general practitioners. The editing appears to have been directed to present the subject-matter in a clear, assimilable manner and to avoid unnecessary duplication.

Apart from giving excellent, up-to-date, practical information on subjects which call daily for the attention of the general man, this set is a handsome addition to any doctor's office or home library.

Up to the present time the following volumes have appeared:

ROBEY: HEADACHE

HEADACHE. By William H. Robey, M.D., Clinical Professor of Medicine, Harvard Medical School; Chief of the Second Medical Service, Boston City Hospital.

Headache is one of the most difficult medical subjects to handle satisfactorily. Dr. Robey treats it, in general, as a symptom of circulatory imbalance, depending on a varied etiologic basis, and the most recent investigative work is reviewed and discussed, with practical suggestions regarding diagnosis and treatment.

DICKSON: POSTURE

POSTURE: In Its Relation to Health. By Frank D. Dickson, M.D., Orthopedic Surgeon, Saint Luke's Hospital and the Kansas City General Hospital, Kansas City, Mo. 118 Illustrations.

Dr. Dickson shows that clinical and other researches during the past twenty years have clearly demonstrated that posture has an important relation to the functioning of the body as a whole. The scattered literature on this subject is collected and connotated and the author's personal experience is added so as to stimulate a deeper interest among physicians regarding the importance of correct posture.

KUGELMASS: FEEDING

CLINICAL NUTRITION AND FEEDING IN INFANCY AND CHILDHOOD. By I. Newton Kugelmass, M.D., Ph.D., Sc.D., Associated Attending Pediatrician, Fifth Avenue Hospital; Riverside Hospital; Pediatricist, Hospital for Ruptured and Crippled; Director, Heckscher Institute for Child Health. 37 Illustrations.

Dr. Kugelmass remarks that half the practice of pediatrics is concerned with specific nutritional therapy. The everyday aspects of scientific pediatric nutritional practice are covered here comprehensively in ten chapters, and practical and quantitative dietaries, based on experience and verified by scientific clinical research, are given for varied conditions. These take into account all the most recent investigations regarding calories, vitamins, mineral content, etc.

BARKER AND TRESCHER: BACKACHE

BACKACHE. By Lewellys F. Barker, M.D., LL.D., Professor Emeritus of Medicine in the Johns Hopkins University and John H. Trescher, M.D., Assistant in Clinical Medicine in the Johns Hopkins University. 55 Illustrations.

The first part of this book deals with anatomic and physiologic facts relating to the study of backache. Part II covers the various pathologic conditions in which backache may occur, the subject being developed from the practical point of view. Part III is devoted to a discussion of the indications for and the technic of special forms of physical and mechanotherapy applicable to the treatment of backache.

MORGAN: FUNCTIONAL DISORDERS OF THE GASTRO-INTESTINAL TRACT

FUNCTIONAL DISORDERS OF THE GASTRO-INTESTINAL TRACT. By William Gerry Morgan, M.D., F.A.C.P., Professor of Gastro-enterology, Georgetown University Medical School; Consulting Physician, Georgetown University Medical School; Consulting Physician, Georgetown Uni-

versity Hospital, Garfield Memorial Hospital and Gallenger Hospital, Washington, D. C. 32 Illustrations.

The author deals especially with the stomach and intestines. While the latest contributions of the leading authorities on the subjects discussed have been consulted, Dr. Morgan draws largely upon his own personal experiences and gives the reader the benefit of such therapeutic measures as he has found of the greatest use in his daily clinical work. The manner of presentation will appeal particularly to general practitioners.

REED: TROPICAL MEDICINE

TROPICAL MEDICINE IN THE UNITED STATES. By Alfred C. Reed, M.D., Professor of Tropical Medicine, the Pacific Institute of Tropical Medicine Within the George Williams Hooper Foundation for Medical Research of the University of California. 60 Illustrations.

By tropical medicine Dr. Reed means the practice of medicine in hot climates. The characteristic of peculiar insect and animal life is only a concomitant. The author's object is to present a serviceable guide to the physician in the United States in his contacts with tropical medicine, since a large portion of the country falls within the limits of hot climate. Not only are there endemic tropical diseases here, but many are casually introduced by the vicissitudes of foreign contacts through commerce, immigration and traveling. The author has had considerable personal experience in this type of medical work.

PACK AND DAVIS: BURNS

BURNS: TYPES, PATHOLOGY AND MANAGEMENT. By Geo. T. Pack, B.S., M.D., Fellow of the Memorial Hospital, New York City; formerly Professor of Pathology and Lecturer in Minor Surgery, the School of Medicine, University of Alabama; one time Instructor in Pharmacology and Toxicology, Yale School of Medicine; one time Assistant in Physiology, Ohio State University; Member American Physiological Society; American Association of Pathologists and Bacteriologists, etc., and A. Hobson Davis, B.S., M.D., Instructor in Pathology, University of Alabama. 60 Illustrations.

In this work the authors have included the results of their large personal experience, but they also make a free analysis of the contributions of clinicians and investigators on the subject of the treatment of extensive burns. Special attention is given to the post-convalescent period, involving orthopedic and plastic surgery. The monograph is a very comprehensive summary of the present-day knowledge of the pathology and treatment of various types of burns.

Davis: Sex Life of Women

FACTORS IN THE SEX LIFE OF TWENTY-TWO HUNDRED WOMEN. By Katharine Bement Davis, Ph.D. Publications of the Bureau of Social Hygiene. New York and London: Harper and Brothers. 1929. Price \$3.50.

There are plenty of books on sex pathology, but little information is available regarding the sex life of so-called normal people—even less

about women than about men—and such information is vitally necessary if we are to undertake the instruction which will make satisfactory adjustments to sex relationships possible.

In this volume, whose author is well prepared for her task and has done an immense amount of work upon it, are presented the results of the study of questionnaires returned by more than 2,000 normal women, about equally divided between the married and the unmarried. The material is elaborately tabulated and intelligently discussed. Personal histories are included where these will be enlightening.

It will come as a surprise to many that about seventy-five percent of the women studied admit having masturbated and that half of these continue the practice. A majority feel that it has been beneficial. Also fifty percent admit homosexual feelings, and more than half of these have indulged in overt practices.

The study of a book like this will enlarge the understanding and sympathy of any right-minded person and will be immensely helpful to physicians, teachers and social workers, by giving them a basis for the evaluation of the condition of those women who appeal to them for advice, help and guidance.

Sachs: Brain Tumors

THE DIAGNOSIS AND TREATMENT OF BRAIN TUMORS. By Ernest Sachs, A.B., M.D., Professor of Clinical Neurological Surgery, Washington University School of Medicine, Saint Louis. Two Hundred Twenty-four Illustrations, including Ten in Colors. St. Louis: C. V. Mosby Company. 1931. Price \$10.00.

The author has written this textbook in order that students might find an adequate discussion of the diagnostic questions that constantly arise when suspected cases of brain tumor present themselves; such discussions of diagnostic points are not, he considers, adequately presented in standard textbooks.

The work resolves itself generally into a consideration of the localization of brain functions and the objective and subjective symptoms that arise when particular areas of the cerebrum and cerebellum are involved by abnormal processes. Neurologic surgery based on such findings has made considerable advances in recent years and in many ways its technic has been standardized.

The author in this work tries to show how a case of brain tumor should be studied. This is illustrated by numerous case reports of such cases as are sufficiently numerous (although not always recognized) that practitioners may expect to encounter them from time to time. The book also deals with the actual treatment of such surgical entities in an up-to-date clinic.

There are 9 chapters; 5 deal with symptomatology and differential diagnostic points; the final chapter deals with operative technic and postoperative treatment.

A book of this sort, written by an experienced neurologic surgeon, should be on the shelf of every general surgeon. Neuro-surgery has been so simplified, in many respects, that brain exploration, to a limited extent at least, may be considered as a branch of general surgery. In

any case, both surgeons and general practitioners should be cognizant of the main diagnostic features of brain tumors.

The book is well printed on good paper and the illustrations are excellent.

Tracy: Epilepsy

THE BASIS OF EPILEPSY. By Edward A. Tracy, M.D. (Harvard), Director of Epileptic Clinic at Forsyth Dental Infirmary, Boston. Illustrated. Boston: Richard G. Badger, Publisher; The Gorham Press. Price \$2.00.

In this small volume, Dr. Tracy has set forth the research studies underlying the findings and ideas presented in his article in this issue (May, 1931) of *CLINICAL MEDICINE AND SURGERY*, in the first part of the book. In the second part he has considered incipient epilepsy. In the third section he gives the details of testing the vasomotor reflexes, with pictures of the typical reactions and also of the "white spots."

This work should prove helpful to physicians who are treating many children or many cases of epilepsy.

Hodson: The Problem of Disease

NEW LIGHT ON THE PROBLEM OF DISEASE. By Geoffrey Hodson. London: Theosophical Publishing House, 1929. (Through the Theosophical Press, Wheaton, Ill., \$1.00.)

The psychologists and psychiatrists are teaching us to look beyond the physical body for the causes of many disease conditions. The author of this little book goes a step further back and asks that we seek them in those higher levels of the human consciousness which we call spiritual.

He begins by stating twenty assumptions on which his thesis is based. These are interesting, if not readily acceptable by most physicians. A little further on occurs the pregnant statement: "Disease is inherent in nature, and will so continue until a certain standard of perfection has been attained. The healer's office is to quicken the evolution of the individual and of the group, so that the coming of that time of attainment may be hastened." He pleads for sound and unbiased investigation of the healing power of spiritual forces.

Physicians who have, in some degree, learned to look for superphysical causes of disease will find this little volume thought-stimulating, even if they cannot follow the author as far as he goes.

Romanis & Mitchiner: Surgery

SCIENCE AND PRACTICE OF SURGERY. By W. H. C. Romanis, M.A., M.B., M.Ch., and Philip H. Mitchiner, M.D., M.S. Third Edition. In Two Volumes. With 716 Illustrations. New York: William Wood and Co. 1930. Price \$12.00.

The authors of this text have aimed to present to the student a book which is sufficiently comprehensive, first, to provide him with all he will require in passing both his ordinary surgical examinations and any higher examinations to which he may aspire, such as that for fellowship in the College of Surgeons and, second, to

present a book which may be of value as a work of reference to the medical practitioner.

An admirable feature of the work is a brief review of the surgical anatomy, surgical pathology, diagnosis and operative technic embodied in each chapter. Without consulting other works, the reader can review rapidly the "highlights" of the subject in which he is particularly interested.

The postoperative treatment of patients—a subject of paramount importance, often, unfortunately, neglected in other treatises on surgery—is accorded brief but lucid consideration.

For the sake of completeness, this reviewer believes that the various chemical and biologic laboratory tests, which constitute so essential a part in diagnosis and, consequently, a valuable index to proper therapy, should have been allotted sufficient space in this work or, at least treated in brief outline form, as is the technic of various surgical operations. The authors argue that limitation of space and the fact that technicians are carrying on this work, has caused them to refrain from including the various clinical tests for obvious reasons. With this we cannot agree.

The practitioner in a small community must be conversant with the routine tests to be made. He would often find it convenient to have at least a brief outline of these embodied in the present work, for the sake of completeness. It is hoped that future editions will see the addition of a chapter on this important and indispensable phase of surgical procedure.

About a dozen collaborators, who took part in the completion of the work, should share the merited honors with the authors.

The work is divided into twenty-four chapters, and is supplemented by a thoroughly practical index.

The illustrations consist mainly of photographs, roentgenograms and some well-executed sketches. The x-ray reproductions, particularly, deserve commendation. The binding and type are good.

All in all, the general practitioner, who is doing minor surgery and is often thrown on his own resources to do major operations, and particularly the student, will find this work serviceable and of indubitable value.

M. T.

Loewenberg: Diagnostic Methods

DIAGNOSTIC METHODS AND INTERPRETATIONS IN INTERNAL MEDICINE. By Samuel A. Loewenberg, M.D., F.A.C.P., Associate Professor of Medicine, Jefferson Medical College; Assistant Physician to the Jefferson Hospital; Visiting Physician to the Philadelphia General Hospital, etc. With 547 Illustrations, Some in Colors. Second Revised Edition. Philadelphia: F. A. Davis Company. 1931. Price \$10.00.

In this work, the author has aimed to compile a textbook of general information upon medical diagnosis, from the standpoint of the rapidly disappearing general practitioner.

The book is intended to cover the field of diagnosis in internal medicine. It gives instructions on the various methods of examining the patient, descriptions of normal findings, enumeration of pathologic conditions with the normal

and pathologic physical signs and, whenever possible, the reasons for such signs.

There are 18 chapters in which these points are dealt with in relation to the systems, regions and organs of the body. Laboratory diagnostic methods are generally subordinated to the position of an accessory to clinical methods and only the simplest technical methods are included. The necessity for exhaustive physical examination is stressed.

The author is justified in his view that no practitioner can become a real specialist until he has practiced general medicine long enough to view human ills from the patient's personality side, rather from the side of a particular type of morbidity.

In this second edition such revisions and additions as are necessary to bring the book to date have been made.

Konikow: Birth Control

PHYSICIANS' MANUAL OF BIRTH CONTROL. By Antoinette F. Konikow, M.D., Author of "Voluntary Motherhood." New York: Buchholz Publishing Company. 1931. Price \$4.00.

This book is apparently an extension and revision of the author's "Voluntary Motherhood" published in 1923. It is presented as an exposition of modern birth control technic.

There are four parts: Part I is a general discussion of the subject, including the theories of conception and contraception; Part II gives a detailed discussion of methods of contraception; Part III deals with the practical applications and technical details; Part IV gives the author's statistics, based on her birth control experience of 415 cases, with their analysis and conclusions drawn from them.

The work is intended for the instruction of physicians seeking information on the subject. It is well-written, specific, and sufficiently extensive for all practical purposes.

Strecker & Apel: Psychology Simplified

DISCOVERING OURSELVES. A View of the Human Mind and How It Works. By Edward A. Strecker, A.M., M.D., and Kenneth E. Appel, Ph.D., M.D. New York: The Macmillan Company. 1931. \$3.00.

A rapidly increasing number of people are insistently asking, "Why do I and my wife and children, my friends, neighbors and business associates, behave in the ways (frequently ridiculous) that we do?" This is a decidedly successful attempt to answer the question.

The first, and far briefer part, sketches the elementary principles of modern psychology. The second and meaty part discusses, in a clear, logical, sensible way, free from unnecessary technicalities, the psychology of everyday life—complexes, repressions, phantasies, sublimations, symbolisms and all the things about which "modern" people are wont to talk very glibly, without understanding them in the least.

This is supposed to be a book for intelligent laymen, and as such will be eagerly welcomed by many; but it contains a wealth of information which is urgently needed by all physicians,

but which, unfortunately, is not understood by more than ten percent of them. Those who lack this knowledge, in usable form and degree, will find their money's worth here.

Alexander: Simplified Religion

THE RELIGION OF LOVE. By Alexander, Grand Duke of Russia. Translated by Jean S. Proctor. New York and London: The Century Co. 1929. Price \$2.00.

To many people, religion seems vastly complicated and "spiritualism" is identified with spooks and table-rappings (which pertain to the cult which should properly be called spiritism), instead of being understood as the development of spirituality—which, again, has nothing to do with churches or ascetic practices, but is something for daily living.

His Highness has here given us, in a beautifully clear and simply-written form, the basic principles of all great religions, and has made them directly practical and usable. He brings out strongly the immense power residing in love and thought.

One section is addressed to doctors and could be read with profit by all physicians. In this he says, "The will to cure at any cost is indispensable in a doctor," and "The time will come when a physician will not be able to obtain his diploma without an education in the things of the spirit."

This book is recommended to those who find the traditional orthodox religious presentations unsuited to their needs and are searching for something to take their place.

Dampier-Whetham: History of Science

A HISTORY OF SCIENCE AND ITS RELATIONS WITH PHILOSOPHY AND RELIGION. By William Cecil Dampier-Whetham, M.A., F.R.S., Fellow and Sometime Senior Tutor of Trinity College, Cambridge, Fellow of Winchester College. New Edition Revised. New York: The Macmillan Company, Cambridge, England: At the University Press. 1931. Price \$4.00.

To us of the twentieth century there is, perhaps, no more fascinating study than that of the history of the development of science, using this word in its broad sense of rational and intuitive knowledge, and not in its usually limited applications to the so-called natural sciences. Few of us stop to think of the real philosophic meaning or conception of knowledge; we are satisfied with the observation of phenomena and of their utilitarian applications, without analyzing the phenomena themselves and understanding their absolute realism or otherwise.

To the ancients, the intellectual Greeks especially, philosophy and science were one. In the Middle Ages both were bound up with theology. Since the Renaissance, and more so within the past century or so, science has ignored metaphysics, has become divorced from both philosophy and theology and has narrowed its field to the so-called natural philosophy group, developing without heed of abstract thought, by experimental and deductive methods, on a purely mechanistic basis.

But science again seems at the turning point, so that it is becoming affiliated with broader philosophic conceptions. To use the author's words: "Evolutionary biology and modern mathematics and physics, on the one hand, have deepened scientific thought and, on the other, have again forced philosophers to take account of science, which has now once more a meaning for philosophy, for theology and for religion. Physics, which for so long sought and found mechanical models of the phenomena observed, seems at last to be in touch with concepts where such models fail—with fundamental things which, in Newton's phrase, 'certainly are not mechanical.'"

Mr. Dampier-Wetham's erudite story of the relations of science with philosophy and religion throughout the ages is a book for the deep thinker—for him who delves beneath superficial seemingness and tries to understand the connection between manifest phenomena and the ultimate absolute realism on which they depend. As the vistas of the panorama of the progress of man's knowledge of nature unfold themselves down to the present day, such a reader will find, with the author, that so-called mechanistic science is too limited to satisfy philosophic curiosity and longings; that inductive and deductive reasoning are insufficient and too circumscribed to answer insistent questions as to the real meaning of phenomena. Indeed, as the learned author finally hints, although not too specifically, the pursuit of science and philosophy must necessarily lead to religion—to the unescapable conception of a Supreme Being, creating and guiding all things. The philosophy of science eliminates chance happenings and must postulate a law giver.

Mackie and McCartney: Bacteriology

AN INTRODUCTION TO PRACTICAL BACTERIOLOGY; A Guide To Bacteriological Laboratory Work. By T. J. Mackie, M.D., D.P.H., Professor of Bacteriology, University of Edinburgh; Honorary Bacteriologist to the Royal Infirmary, Edinburgh; etc. and J. E. McCartney, M.D., D.Sc., Director of Research and Pathological Services, Late Metropolitan Asylums Board, London; Formerly Lecturer in Bacteriology, University of Edinburgh; etc. Third Edition. New York: William Wood and Company. 1931. Price \$3.50.

This book is intended as a guide and practical introduction to bacteriology for the medical undergraduate, as well as for post-graduate students. The present edition has been revised to date and apparently fulfils well the authors' object.

Rea: Diets

THE DIET BOOK; for Doctor, Patient and Housewife. With Specimen Menus for One Week and Recipes. By Marguerite Requa Rea (Mrs. Alec. L. Rea). With a Foreword by Sir James Purves-Stewart, K.C.M.G., C.B., M.D. (Ed.), F.R.C.P. (London), Physician to Westminster Hospital. London: Humphrey Milford, Oxford University Press. 1931. Price \$2.75.

In a general way, physicians when prescribing a restricted diet confine themselves to a list of

the foods the patient may eat and those he may not. It is left to the patient and those serving him to vary the daily menu from these lists.

The object of the author is: To simplify the physician's labor in detailing for his patients what they may or may not eat in certain conditions; to indicate to the patient himself a dietary suitable, not too monotonous, but at the same time palatable; and to give to the harassed housewife practical suggestions as to dishes which may tempt the capricious appetite of an invalid, while keeping within the bounds of a prescribed diet.

Physicians will do a service to their patients who require special diets by recommending this book, and will prescribe diets more intelligently after reading it themselves.

Alexander and Staub: Psychoanalysis and Crime

THE CRIMINAL, THE JUDGE, AND THE PUBLIC; A psychological Analysis. By Franz Alexander, M.D., Visiting Professor of Psychoanalysis at the University of Chicago and Hugo Staub, Attorney at Law, Berlin. Translated from the German by Gregory Zilboorg, M.D., Bloomingdale Hospital, White Plains, New York. New York: The Macmillan Company. 1931. Price \$2.50.

The joint authors of this book, a physician and a jurist, endeavor to utilize the psychoanalytic criminology.

The book is written primarily for the medico-legal expert and jurist, and, in so far as justice is administered in accordance with general public opinion, it is also hoped that the public will also be influenced; but this hope seems to be scarcely justified, as the writing is heavy and technical.

Psychoanalysis is being made to prove too much. Few of us have the time (even if we admitted the rationality) to pursue the hooking up of stealing of medical books with an Oedipus complex. Few physicians will find juicy pabulum between these covers.

McBride: Crippled Children

CRIPPLED CHILDREN; Their Treatment and Orthopedic Nursing. By Earl D. McBride, B.S., M.D., F.A.C.S., Instructor in Orthopedic Surgery, University of Oklahoma, School of Medicine; Attending Orthopedic Surgeon to St. Anthony Hospital; Associate Orthopedic Surgeon to Oklahoma City General and Wesley Hospitals; Visiting Surgeon to W. J. Bryan School for Crippled Children; Chief of Staff to Reconstruction Hospital, Oklahoma City, Okla. One Hundred Fifty-nine Illustrations. Saint Louis: The C. V. Mosby Company. 1931. Price \$3.50.

It is said that there are between three and four hundred thousand crippled children in the United States, chiefly as a result of neglect of early preventive treatment.

To social workers and others interested in the care and treatment of crippled children, this plainly-written book will supply much needed and valuable information. This information is mainly directed to serve the nurse in her training and practice.

In addition to the service of the nurse, however, responsibility for success of the orthopedic surgeon's work depends largely upon the degree of cooperation of social workers and parents, so that they also should have a reliable source of information such as this available to them. Ordinary orthopedic textbooks are too technical for this purpose and the knowledge conveyed here should be most important to those without scientific training, who are in any way interested in the relief of the deformities and physical handicaps of children.

Health Insurance, State Medicine and the Cost of Medical Care

HANDBOOK OF HEALTH INSURANCE, STATE MEDICINE AND THE COST OF MEDICAL CARE. Chicago: American Medical Association Press. 1931. Price \$0.35.

This handbook, prepared by the American Medical Association, presents, for the use of those specially interested in reading in the field of medical economics, a number of abstracts of articles on health insurance, state medicine and the cost of medical care. These articles have appeared in domestic and foreign publications during the past five or ten years.

Blum: Practical Dietetics

PRACTICAL DIETICS; For Adults and Children in Health and Disease. By Sanford Blum, A.B., M.S., M.D., Head of Department of Pediatrics, and Director of the Research Laboratory, San Francisco Polyclinic and Post Graduate School. Fourth Revised and Enlarged Edition. Philadelphia: F. A. Davis Company. 1931. Price \$4.00.

This book, like several others of the kind which have been published, is intended to save the physician's time in prescribing suitable diets for specific disease conditions. In a general way, besides giving typical diet lists, there are parallel lists of foods that may be taken and of those which should be avoided. The reasons for both are succinctly stated.

Part I contains dietaries for adults in health and disease. Part II gives dietaries for infants and children in health and disease.

In this fourth edition, a list of the chief sources of the important vitamins has been added, as well as a discussion of alkaline foods in the treatment of acidosis.

The arrangement of the book is alphabetical, according to diseases.

Books of this type are useful in providing the doctor with basic food lists, which he may modify in the case of any patient. The danger of looking at a patient as a pathologic type specimen, rather than as an individual, should, however, be avoided.

Garland: Medical Philosophy

THE DOCTOR'S SADDLE-BAG. By Joseph Garland, M.D., Associate Editor, *The New England Journal of Medicine*. Published by author. Price \$1.50, to be obtained through *New England Journal of Medicine*, 165 Newbury Street, Boston, Mass.

The medical editor who aspires to do some actual directing of the thought of his readers does not confine his editorial writings to strictly technical subjects, but discourses upon the humanities, at times, as Dr. Joseph Garland has done in the *New England Journal of Medicine*.

This is a well-printed and attractively-bound collection of his more or less philosophical editorials from that journal. Some are splendid; most of them are worthwhile.

A pleasant book for the doctor to tuck away in the corner of his desk, to dip into when he has a few minutes for relaxation from his pressing duties.

Abderhalden: Handbook of Biologic Methods

HANDBUCH DER BIOLOGISCHEN ARBEITSMETHODEN. Unter Mitarbeit von über 700 bedeutenden Fachmännern herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden, Direktor des Physiologischen Institutes der Universität Halle a. d. Saale. Abt. V. Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 9, Heft 4. Methodik der Belastungsproben als Funktionsprüfung. Otto Klein und Wilhelm Nonnenbruch—Prag: Funktionsprüfung der Niere mittels Belastungsproben. Mit 25 Abbildungen. Berlin and Wien: Urban & Schwarzenberg. 1931. Price RM. 12.50.

Vol. 5, Section 9, Part 4, of Abderhalden's exhaustive treatise on methods of biological research, is devoted to a contribution by Klein and Nonnenbruch on kidney functional tests.

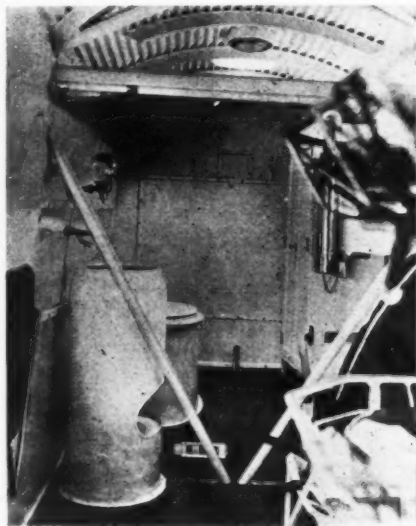
Brugsch: General Medicine

ERGEBNISSE DER GESAMTEN MEDIZIN. Unter Mitwirkung hervorragender Fachgelehrter. Herausgegeben von Prof. Dr. Th. Brugsch, Fünftehnter Band. I. Hälfte und 2. Hälfte. Berlin & Wien: Urban & Schwarzenberg. 1930 und 1931. Price geh. RM 30.—; geb. RM 35.—.

Vol. 15 of this extensive and modern practice of medicine is divided into two sections. The first contains seven and the second six contributions from leading German clinicians on general subjects of internal medicine, such as acidosis, stomach cancer, exophthalmic goiter, pyuria in infants, gonorrhea neonatorum, menstrual disturbances, etc.

This work is an up-to-date one for the general practitioner who reads German.

MEDICAL · NEWS



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New Army Ambulance Plane

This photograph shows an interior view of the first complete ambulance plane to be built for the U. S. Army Air Corps. The ship is a monoplane, having accommodations for 12 patients, a doctor, attendant and pilot. Included in its equipment is a complete set of surgeon's supplies, drinking fountain, toilet facilities and oxygen apparatus for use in high-altitude flying and in emergency cases.

Dr. Axel Munthe in Rome

The Swedish physician, Dr. Axel Munthe, who sprang into world-wide fame a year or two ago, after the publication of his book, "The Story of San Michele," is now very feeble and almost blind and is living in a suburb of Rome, because his insomnia is not so troublesome (and reporters and celebrity hunters are easier to escape) there as on the island of Capri, where San Michele stands vacant.

The Doctor, who feels that death is near, finds it very interesting and is writing a new book, "Death and the Doctor." He was made very happy and deeply moved on learning that his famous and delightful reminiscences are being issued in Braille, so that they can be read by blind people.

Opening in South Dakota

A town, twelve miles from the nearest village, where previous physicians have always done well, needs a medical attendant.

If interested, write to F. B. Kargleder, Pharmacist, White Rock, South Dakota, for full particulars.

International Stomatologic Congress

The first International Stomatologic Congress will convene at Budapest, Hungary, Sept. 2 to 7, 1931. A tour has been arranged for those desiring to attend the Congress, sailing from New York, July 22.

Those desiring detailed information may procure it by writing to the chairman of the American committee, Dr. Alfred J. Asgis, 509 Madison Ave., New York, N. Y.

Addison's Disease Controlled by Cortin

An item in *Science News Letter* for Feb. 7, 1931, reports that a man, suffering from a hopeless case of Addison's disease, has been kept alive for six months by the administration of an extract of the suprarenal cortex (Cortin), practically free from adrenalin, the medullary hormone, prepared by Prof. Frank A. Hartman and Dr. Katherine A. Brownell, of Buffalo.

Other workers, among them Swingle, of Princeton University, and Pfiffner, of the Long Island Biological Association, have also been successful in preparing similar extracts, and some of these preparations have been successfully used in similar cases by Rowntree and Greene, of the Mayo Clinic.



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New Medical School and Hospital at Duke University

The picture shows the new buildings for Duke University Medical School, Durham, N. C., which were dedicated April 20, 1931. The buildings cost \$4,000,000 and the hospital has an endowment of \$6,000,000. The school will accommodate 300 students and the hospital 406 patients.

Send your name to us for the first issue of the **JOURNAL OF VITAMINS**.

American Public Health Association

The sixtieth annual meeting of the American Public Health Association will be held in Montreal, Quebec, Canada, September 14 to 17, inclusive. Several other related societies will hold meetings at the same time.

This is the first time since 1908 that the Association has met in Canada, and offers an excellent opportunity for the cultivation of friendliness and cooperation across the border.

A note to the Association, at 450 Seventh Ave., New York City, will bring particulars.

Serum Center in Chicago

The blood serum of patients who are convalescing or have recovered from certain acute diseases has been found to be prophylactic or curative in the maladies involved. In anterior poliomyelitis (infantile paralysis), for example, it has been found that the serum from one who has recovered from the disease, if given to an acute suf-

ferer in the preparalytic stage, will prevent paralysis.

The Michael Reese Hospital, Chicago, has recently established a Center for the collection and distribution of human blood serums, for use in the treatment of various diseases. This department will be known as the Samuel Deutsch Convalescent Human Serum Center.

Chicago's Low Death Rate From Tuberculosis

The figures for 1930 show that Chicago has established a new low record for mortality from tuberculosis in large cities, in this or other countries, with a report of 66.1 deaths per 100,000 of population. The next large American city on the list is New York, with a rate of 73.0.

Sugar Consumption in the United States

The maximum consumption of sugar in the United States was in 1926, when the figure reached 109.3 pounds per person per year. The present capacity of the United States refineries is about 71 percent in excess of what they produced for domestic consumption in 1930 and slightly more than 50 percent in excess of what they produced for domestic consumption in 1926. Sugar has sold at retail at a price representing 400 calories for 1 cent.—Editorial, J.A.M.A., April 18, 1931.

Send for your copy of "Who's Your Health Banker." Ready now.

Pollens

Atmospheric tests have shown that there are days in the autumn when 1,000 tons of pollen sift down from the air in the ragweed area of the United States. The annual crop of ragweed pollen in this country has been estimated at a million tons. This means little to most people, but to sensitive persons this fine, yellow powder is more poisonous, grain for grain, than is potassium cyanide.

Get ready to protect your hay-fever patients from this distressing "snow storm" with pollen antigens, ephedrine and other measures.

Send · For · This · Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physician's supplies, foods, etc., CLINICAL MEDICINE and SURGERY, North Chicago, Ill., will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is

to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

When requesting literature, please specify whether you are a doctor of medicine, dentistry, medical student, a registered pharmacist, or a nurse.

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| <p>O- 3 Storm Binder and Abdominal Supporter. 4-page folder by Dr. Katharine L. Storm.</p> <p>O- 47 Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.</p> <p>O- 95 Everything for the Sick. Lindsay Laboratories.</p> <p>O-116 Hemo-Glycogen, The New Product Hemoglobin Compound and Liver Extract. Chappel Bros., Inc.</p> <p>O-120 Building Resistance — Guitonic. William R. Warner & Co., Ltd.</p> <p>O-196 "Facts Worth Knowing." Intravenous Products Co. of America, Inc.</p> <p>O-258 Prophylaxis. August E. Drucker Co.</p> <p>O-269 Special Course No. VI Traumatic Surgery. Illinois Post Graduate Medical School, Inc.</p> <p>O-271 The Intestinal Flora. The Battle Creek Food Company.</p> <p>O-292 Acidosis and Infection—Alka-Zane William R. Warner & Co., Inc.</p> <p>O-310 Conclusions from published research of the value of Ceanothyn as a hemostatic. Flint, Eaton & Co.</p> | <p>O-318 Blood Clinical and Laboratory Diagnosis. A book of 160 pages by Henry Irving Berger, M.D. Battle & Company.</p> <p>O-347 Graphic Chart of the Treatment of Circulatory Disturbances. Merck & Company.</p> <p>O-354 Getting the Most Out of Life. Stanco, Inc.</p> <p>O-374 Table for Determining Date of Delivery. The Viburno Company, Inc.</p> <p>O-383 Syrup Histosan Controls the Cough in Acute and Chronic Bronchitis, Pneumonia and other Pulmonary Diseases. Ernst Bischoff Co., Inc.</p> <p>O-391 Imhotep. Egyptian Medicine Was a quaint Mixture of Rationalism and Magic — Agarol. William R. Warner & Co., Inc.</p> <p>O-392 Arthritis. Its Classification and Treatment. Battle & Co.</p> <p>O-401 When the Cross Roads are Reached in Hemorrhoids (Piles). Schering & Glatz, Inc.</p> <p>O-402 The First Question—Agarol. Wm. R. Warner & Co., Inc.</p> <p>O-404 Urotropin, the Intravenous Administration of the Original Formaldehyde-Liberating Urinary and Systemic Antiseptic. Schering & Glatz.</p> |
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- O-443 AbilenA. Its Location, Discovery. Origin, Chemistry, Medicinal or Clinical Value and Uses. The AbilenA Co.
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- O-481 The Breath of Life—Alpha-Lobelina. Ernst Bischoff Company Inc.
- O-490 Are Your Patients All at Sea? Detoxol Paste. The Wm. S. Merrell Company.
- O-491 Announcing a New and Better Sedative—Sedormid. Hoffmann-La Roche, Inc.
- O-496 Natural Salicylates. The Wm. S. Merrell Company.
- O-504 Bedtime Nourishment. Mellin's Food Co.
- O-505 Mellin's Food—A Milk Modifier, Mellin's Food Co.
- O-507 The Secret of Our Digestive Glands, J. W. Wuppermann Angostura Bitters Agency, Inc.
- O-523 Urinary Tests and Color Charts for Practical Use in Office Diagnosis. Od Chemical Co.
- O-524 Balance, the Importance of the Acid-Base Equilibrium of the Body. The BiSoDol Company.
- O-525 The Treatment of Hemorrhage with Therapeutic Notes on the Use of Ceanothyn. Flint, Eaton & Company.
- O-527 Elixir Angostura Amarum Siebert, Angostura Bitters in the Daily Practice. J. W. Wuppermann Angostura Bitters Agency, Inc.
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- O-529 "A. L. A." A Remarkable Local Anesthetic. Sutliff & Case Co., Inc.
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- O-535 Vera-Perles of Sandalwood Compound. The Paul Plessner Company.
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- O-539 Burdick Light Therapy Equipment. The Burdick Corporation.
- O-540 Infra-Red Therapy with Burdick Zoalites. The Burdick Corporation.
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- O-542 Colloidal Mercury Sulphide-Hille Effective in Wassermann-Fastness. Hille Laboratories, Inc.
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- O-544 "Neversslip"—Definite Aids in Reducing Infant and Maternal Mortality. "NSS" Laboratory.
- O-545 The Etiology and Treatment of Hay Fever—Hay Fever Antigens. The National Drug Company.